

# CONKLIN'S MANUAL

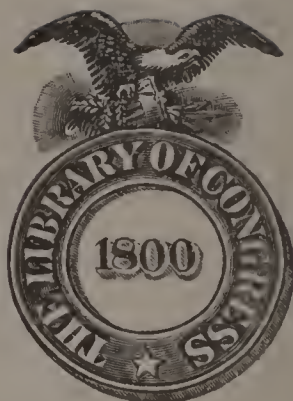
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## Edison's Encyclopedia Combined



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# CONKLIN-EDISON MANUAL



*Conklin, George*

WORTH ITS WEIGHT IN GOLD

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✓ CONKLIN'S  
HANDY MANUAL  
of Useful Information

Combined with

EDISON'S ENCYCLOPEDIA  
AND  
ATLAS OF THE WORLD ✓

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The World's Knowledge in a Nutshell

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✓ Edited by

JAMES A. BEATON, M. A.

Author of Practical Compound of Electricity  
and

ALFRED B. CHAMBERS, Ph.D.

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REVISED AND ENLARGED ✓

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# USEFUL INFORMATION

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## **The Bibles of the World.**

The chief sacred books of the world are the Scriptures of the Christians, the Tripitake of the Southern Buddhists, the Five Kings of the Chinese, the three Vedas of the Hindoos, the Koran of the Mohammedans, and the Zendavesta of the Parsees.

The Koran is the most recent, having been written in the seventh century after Christ. It contains many excerpts from the Old and New Testaments and the Talmud.

The Tripitake contains sublime morals and pure aspirations. The author lived and died in the sixth century before Christ.

The Five Kings contain wise sayings on the duties of life. The word "king" in the Chinese language means web of cloth. From this it is presumed that they were originally written on five rolls of cloth. They were written by a number of wise men some time not earlier than the eleventh century before Christ.

The Vedas cannot be proven to antedate the twelfth century before the Christian era.

The Zendavesta is regarded among scholars as being the greatest and most learned of all sacred writings, excepting the Christian Bible. It was written by Zoroaster in the twelfth century before Christ.

Moses wrote the Pentateuch at least 1,500 years before Christ; therefore, that portion of the Christian Bible is at least 300 years older than any other sacred writings.

The Edda, a semi-sacred work of the Scandinavians, was first given to the world in the 14th century.

There are estimated to be about 564,510,000 people living under Christian laws; 138,031,000 Buddhists; 221,825,000 Mohammedans; 300,830,000 Confucians and Taoists (China); 12,000,000 Jews, and 210,540,000 under the Vedas of the Hindus.

**THE BIGGEST THINGS.****INTERESTING FACTS USEFUL WHEN YOU GET INTO  
AN ARGUMENT.**

The largest theater in the world is the Opera-house in Paris. It covers nearly three acres of ground; its cubic mass is 4,287,000 feet; it cost about 100,000,000 francs. The largest suspension bridge is the one between New York City and Brooklyn; the length of the main span is 1,595 feet 6 inches; the entire length of the bridge is 5,980 feet. The loftiest active volcano is Popocatepetl—"smoking mountain"—thirty-five miles southwest of Puebla, Mexico; it is 17,748 feet above the sea level, and has a crater three miles in circumference, and 1,000 feet deep.

The greatest fortress, from a strategical point of view, is the famous stronghold of Gibraltar. It occupies a rocky peninsula jutting out into the sea, about three miles long and three-quarters of a mile wide. One central rock rises to a height of 1,435 feet above the sea level. Its northern face is almost perpendicular, while its east side is full of tremendous precipices. On the south it terminates in what is called Europa Point. The west side is less steep than the east, and between its base and the sea is the narrow, almost level span on which the town of Gibraltar is built. The fortress is considered impregnable to military assault.

The biggest cavern is the Mammoth Cave, in Edmonson County, Kentucky. It is near Green River, about six miles from Cave City, and twenty-eight from Bowling Green. The cave consists of a succession of irregular chambers, some of which are large, situated on different levels. Some of these are traversed by the navigable branches of the subterranean Echo River. Blind fish are found in its waters.

The longest tunnel in the world is that of the Simplon, between Switzerland and Italy. It is 12 miles and 458 yards long. The St. Gothard tunnel is 9 miles and 564 yards long. Both tunnels have double railway tracks and are seven



yards high and nine yards wide. The Simplon tunnel was begun in August, 1898, and completed in February, 1905. The total cost was \$13,500,000.

The biggest trees in the world are the mammoth trees of California. One of a grove in Tulare County, according to measurements made by members of the State Geological Survey, was shown to be 276 feet in height, 108 feet in circumference at base, and 76 feet at a point 12 feet above ground. Some of the trees are 376 feet high, and 34 feet in diameter. Some of the largest that have been felled indicate an age of from 2,000 to 2,500 years.

The largest desert is that of Sahara, a vast region of Northern Africa, extending from the Atlantic Ocean on the west to the valley of the Nile on the east. The length from east to west is about 3,000 miles, its average breadth about 900 miles, its area about 2,000,000 square miles. Rain falls in torrents in the Sahara at intervals of five, ten and twenty years. In summer the heat during the day is excessive, but the nights are often cold.

Queen Victoria had the largest bound book ever made. It is eighteen inches thick and weighs sixty-three pounds. It contains the jubilee addresses of congratulations.

The largest coal breaker in the world is in operation at Edwardsville colliery, Luzerne County, Pennsylvania. It prepares for market 4,000 mine cars of coal every ten hours.

A single sheet of paper 6 feet wide and  $7\frac{3}{4}$  miles in length has been made at the Watertown (N. Y.) paper works. It weighed 2,207 pounds, and was made and rolled without a break.

The greatest elevation ever attained by balloonists was 37,000 feet—about seven miles. The aeronauts were James Glaisher, F. R. S., and Mr. Coxwell. The ascent was made Sept. 5, 1862, at Wolverhampton, England. A record of nearly 33,000 feet was claimed by the French balloon Icare in 1919. Prof. Berson, of Berlin, made an official record of 28,750 feet in 1894.

In 1920 Maj. R. W. Schroeder reached a height of 36,020 feet in an airplane. The dirigible balloon altitude record was made by the Clement Bayard III (French) in 1912. Carrying 6 passengers, it reached a height of 9,514 feet.

The longest single span of wire in the world is used for a telegraph in India. It is stretched over the River Kistuah, between Bezorah and Sectauagrum. It is over 6,000 feet long, and is stretched from the top of one mountain to the top of another, each mountain being nearly 2,000 feet high.

The following is the seating capacity of the eight largest churches in the world: St. Peter's, Rome, 54,000 persons; Milan Cathedral, 37,000; St. Paul, London, 25,000; St. Sophia, Constantinople, 23,000; Notre Dame, Paris, 21,000; Florence Cathedral, 20,000; Pisa Cathedral, 13,000; St. Mark's, Venice, 7,000; First Church of Christ, Scientist, Boston, Mass. (the Mother Church), 5,000; St. Patrick's Cathedral, New York, 2,500, with standing room for 8,000.

The two largest castings in the world are in Japan, one at Nara and the other at Kamakura. Both are statues. The one at Nara is 53 feet and 9 inches from the base to the crown of the head. It was first cast in the eighth century, but was afterward destroyed and recast in the year 1223. The Kamakura statue is 47 feet high.

The Sydney (Australia) lighthouse is provided with the largest electric light in the world. It has a power of 180,000 candles and may be seen from ships fifty miles at sea. The next largest is in the Palais d'Industrie and has a power of 150,000 candles. San Jose, Cal., has the most powerful electric light in the United States, one of 24,000 candle power.

The stone pavement in front of the residence of the late William H. Vanderbilt, in New-York City, is made up of the largest slabs of flagging stone ever put in a single pavement. The stones were taken from quarries in Pike County, Pennsylvania, west of Port Jervis, N. Y., and from

the Bigelow quarries in Ulster County, New York. The large slab immediately in front of the residence is the largest slab of its kind ever transported from any quarry and cost the millionaire \$9,200. The entire cost of the pavement was \$47,000.

The largest bell in the world is the great bell of Moscow, at the foot of the Kremlin. Its circumference at the bottom is nearly 68 feet, and its height more than 21 feet. In its stoutest part it is 23 inches thick; and its weight has been computed to be 443,772 lbs. It has never been hung, and was probably cast on the spot where it now stands. A piece of the bell is broken off. The fracture is supposed to have been occasioned by water having been thrown upon it when heated by the building erected over it being on fire.

### Disastrous Floods of World History

| Place                                       | Date           | Dead    |
|---------------------------------------------|----------------|---------|
| Dort, Holland.....                          | April 17, 1421 | 100,000 |
| Holland (dikes).....                        | 1530           | 400,000 |
| Catalonia .....                             | 1617           | 50,000  |
| Zeeland and Hamburg.....                    | 1717           | 1,300   |
| Navarre .....                               | 1787           | 2,000   |
| Lorca, Spain (reservoir)                    | April 14, 1802 | 1,000   |
| Dantzic .....                               | April 9, 1829  | 1,200   |
| New Orleans.....                            | May 12, 1849   | 1,600   |
| Sheffield, Eng.....                         | March 12, 1864 | 250     |
| Mill River Valley,<br>Northampton, Mass.... | May 16, 1874   | 144     |
| Pittsburgh, Pa.....                         | July 26, 1874  | 220     |
| Szegedin, Hungary.....                      | March 12, 1889 | 1,177   |
| Marcia, Spain.....                          | Oct. 16, 1879  | 1,000   |
| Johnstown, Pa.....                          | May 31, 1889   | 2,280   |
| Mississippi river, St. Louis                | May 25, 1892   | 250     |
| Oil City, Pa.....                           | June 5, 1892   | 350     |
| Mississippi river, St. Louis                | April 13, 1893 | 250     |
| Brazos river, Tex.....                      | July 5, 1899   | 200     |
| Galveston, Tex.....                         | Sept. 8, 1900  | 6,000   |
| Oakford Park, Pa.....                       | July 6, 1903   | 50      |
| Tokio, Japan.....                           | Aug. 13, 1910  | 1,112   |
| Austin, Pa.....                             | Sept. 30, 1911 | 50      |
| Ohio and Indiana.....                       | March 22, 1913 | 506     |
| Texas .....                                 | Dec. 1913      | 200     |

### Items Concerning Ocean Travel

**MAIL STEAMSHIPS.**—The Cunard Line has carried the ocean mails since 1840. The earlier steamers of this line, for several years, were all side-wheelers.

**A KNOT.**—In sailor phrase a knot is a nautical mile, and includes 6,080 feet. By United States surveyors' measure a mile includes 5,280 feet.

**FIRST OCEAN PROPELLER.**—The method of moving vessels by screw propulsion, was invented by Ericsson, in 1836, and was practically applied on the Great Britain, which made the trip from Liverpool to New York in 14 days, 21 hours, in 1845.

**FIRST STEAMER CROSSING OCEAN.**—The Savannah, 380 tons, launched at Corlear's Hook, New York, in 1818, was the first vessel using steam to cross the ocean, the journey from Savannah to Liverpool being made in 1819 in 25 days, using steam 18 days.

**FOG.**—The passenger should not grumble at fog. It should be understood that this dense mist is the method pursued by Nature in taking up moisture from the ocean into the atmosphere to be wafted into clouds thousands of miles inland, to fall upon the earth in refreshing rain.

**CROSSING OCEAN—TIME IN 1838.**—The Great Western, 750 tons, the largest steamer at that time, made the journey from Bristol, England, to New York in 15 days, April, 1838; brought over 7 passengers; carried back 66 passengers, and made return trip in 14 days. Coal consumed on westward trip, 655 tons; consumed on return trip, 392 tons.

**THE GREAT EASTERN.**—Designed by Brunel, was begun at Millwall, London, in 1854, and was launched in 1858; was 680 feet long, 83 feet broad, draught of 25 feet; had screw engines of 4,000 horse-power, and paddle engines of 2,600 horse-power. Served in the laying of the Atlantic cable, but was unfitted for ocean use in competition with the more rapid sailing vessels, which made their journeys at less expense. Was sold in 1887 for \$40,000, and was broken up.



**FACTS ABOUT THE HUMAN BODY**

The weight of the male infant at birth is 7 lbs. avoirdupois; that of the female is not quite  $6\frac{1}{2}$  lbs. The maximum weight ( $140\frac{1}{2}$  lbs.) of the male is attained at the age of 40; that of the female (nearly 124 lbs.) is not attained until 50; from which ages they decline afterwards; the male to  $127\frac{1}{4}$  lbs., the female to 115 lbs., nearly a stone. The full-grown adult is 20 times as heavy as a new-born infant. In the first year he triples his weight, afterwards the growth proceeds in geometrical progression, so that if 50 infants in their first year weigh 1,000 lbs., they will in the second weigh 1,210 lbs.; in the third 1,331; in the fourth 1,464 lbs.; the term remaining very constant up to the ages of 11-12 in females, and 12-13 in males, where it must be nearly doubled; afterwards it may be continued, and will be found nearly correct up to the age of 18 or 19, when the growth proceeds very slowly. At an equality of age the male is generally heavier than the female. Towards the age of 12 years only an individual of each sex has the same weight. The male attains the maximum weight at about the age of 40, and he begins to lose it very sensibly towards 60. At 80 he loses about 13.2328 lbs., and the stature is diminished 2.756 inches. Females attain their maximum weight at about 50. The mean weight of a mature man is 140 lbs., and of an average woman 94 lbs. In old age they lose about 12 or 14 lbs. Men weigh most at 40, women at 50, and begin to lose weight at 60. The mean weight of both sexes in old age is that which they had at 19.

When the male and female have assumed their complete development they weigh almost exactly 20 times as much as at birth, while the stature is about  $3\frac{1}{2}$  times greater.

Children lose weight during the first three days after birth; at the age of a week they sensibly increase; after one year they triple their weight; then they require six years to double their weight, and 13 to quadruple it.

It has been computed that nearly two years'

sickness is experienced by every person before he is 70 years old, and therefore that 10 days per annum is the average sickness of human life. Till 40 is but half, and after 50 it rapidly increases. The mixed and fanciful diet of man is considered the cause of numerous diseases from which animals are exempt. Many diseases have abated with changes of diet, and others are virulent in particular countries, arising from peculiarities.

*Human Longevity.*—Of 100,000 male and female children, in the first month they are reduced to 90,396, or nearly a tenth. In the second, to 87,936. In the third to 86,175. In the fourth, to 84,720. In the fifth, to 83,571. In the sixth, to 82,526, and by the end of the first year to 77,528, the deaths being 2 to 9. The next four years reduces the 77,528 to 62,448, indicating 37,552 deaths before the completion of the fifth year.

At 25 years the 100,000 are half, or 49,995; at 52, one-third. At 58½, a fourth, or 25,000; at 67, a fifth; at 76, a tenth; at 81, a twentieth, or 5,000; and ten attain 100. Children die in large proportions because their diseases cannot be explained, and because the organs are not habituated to the functions of life. The mean of life varies in different countries from 40 to 45. A generation from father to son is about 30 years; of men in general 5/6ths die before 70, and 15/16ths before 80. After 80 it is rather endurance than enjoyment. The nerves are blunted, the senses fail, the muscles are rigid, the softer tubes become hard, the memory fails, the brain ossifies, the affections are buried, and hope ceases. The 16th die at 80, except a 133d, at 90. The remainder die from inability to live, at or before 100.

About the age of 36 the lean man usually becomes fatter and the fat man leaner. Again, between the years 43 and 50 his appetite fails, his complexion fades, and his tongue is apt to be furred on the least exertion of body or mind. At this period his muscles become flabby, his

joints weak; his spirits droop, and his sleep is imperfect and unrefreshing. After suffering from these complaints a year, or perhaps two, he starts afresh with renewed vigor, and goes on to 61 or 62, when a similar change takes place, but with aggravated symptoms. When these grand periods have been successively passed, the gravity of incumbent years is more strongly marked and he begins to boast of his age.

In Russia, much more than in any other country, instances of longevity are numerous, if true. In the report of the Holy Synod, in 1827, during the year 1825, and only among the Greek religion, 848 men had reached upwards of 100 years of age; 32 had passed their 120th year, 4 from 130 to 135. Out of 606,818 men who died in 1826, 2,765 were above 90; 1,432 above 95; and 848 above 100 years of age. Among this last number 88 were above 115; 24 more than 120; 7 above 125; and one 130. Riley asserts that Arabs in the Desert live 200 years,

On the average, men have their first-born at 30 and women at 28. The greatest number of deliveries take place between 25 and 35. The greatest number of deliveries take place in winter months, and in February, and the smallest in July, *i. e.*, to February, as 4 to 5 in towns and 3 to 4 in the country. The night births are to the day as 5 to 4.

*Human Strength.*—In Schulze's experiments on human strength, he found that men of five feet, weighing 126 lbs., could lift vertically 156 lbs. 8 inches; 217 lbs. 1.2 inches. Others, 6.1 feet, weighing 183 lbs., 156 lbs. 13 inches, and 217 lbs. 6 inches; others 6 feet 3 inches, weighing 158 lbs., 156 lbs. 16 inches, and 217 lbs. 9 inches. By a great variety of experiments he determined the mean human strength at 30 lbs., with a velocity of 2.5 feet per second; or it is equal to the raising half a hogshead 10 feet in a minute.

A good authority reckoned 1 horse equal to 5 men. Porters carry from 150 to 250 pounds. A man draws horizontally 70 to 80 lbs., and thrusts at the height of his chest 28 or 30 lbs.

In hot climates men cannot perform half the continued labor. A man's mean labor is sufficient to raise 10 lbs. 10 feet in a second, for 10 hours per day, or 100 lbs. 1 foot in a second, or 36,000 feet in 10 hours; that is, 100 lbs. per day would be 36,000 feet in a day, which he calls a dynamic unit. The force of a man in turning a winch is taken at 116 lbs.; or as much as would raise 256 lbs. 3,281 feet in a day; his force in pumping is as 190, or equal to 410 lbs. in 3,281 feet; in ringing, 259, or 572 lbs. in 3,281 feet; and in rowing 273, or 608 lbs. in 3,281 feet. In working a pump, a winch, a bell, and rowing, the effects are as 100, 167, 227 and 248. A man with an auger exerts a force of 100 lbs., with a screwdriver of 84 lbs., with a windlass 60 lbs., a hand-plane 50 lbs., a hand-saw 36 lbs.

### National Parks in the United States

| Name.            | Location.       | Created.       | Acres.    |
|------------------|-----------------|----------------|-----------|
| Yellowstone ...  | Montana-Wyo.    | March 1, 1872  | 2,142,720 |
| Hot Spgs. Res..  | Arkansas        | June 16, 1880  | 912       |
| Zoological ..... | Dist. Columbia  | March 2, 1889  | 170       |
| Chickamauga-     |                 |                |           |
| Chattanooga      | Georgia-Tenn... | Aug. 10, 1890  | 6,195     |
| Antietam .....   | Maryland        | Aug. 20, 1890  | 43        |
| Rock Creek....   | Dist. Columbia  | Sept. 27, 1890 | 1,606     |
| Gen. Grant....   | California      | Oct. 1, 1890   | 2,560     |
| Sequoia .....    | California      | Oct. 1, 1890   | 160,000   |
| Yosemite .....   | California      | Oct. 1, 1890   | 967,680   |
| Casa Grande      |                 |                |           |
| Ruin .....       | Arizona         | June 22, 1892  | 480       |
| Shiloh .....     | Tennessee       | Dec. 27, 1894  | 3,000     |
| Gettysburg ....  | Pennsylvania    | Feb. 11, 1895  | 877       |
| Vicksburg ....   | Mississippi     | Feb. 21, 1899  | 1,233     |
| Mt. Rainier....  | Washington      | May 22, 1899   | 207,360   |
| Crater Lake....  | Oregon          | May 22, 1902   | 159,360   |
| Wind Cave.....   | So. Dakota      | Jan. 9, 1903   | .....     |
| Abraham Lin-     |                 |                |           |
| coln Homest'd    | Kentucky        | July 17, 1916  | 137       |
| Glacier .....    | Montana         | May 11, 1910   | 981,681   |
| Gullford Court   |                 |                |           |
| House .....      | No. Carolina    | March 2, 1917  | 125       |
| Hawaii .....     | Hawaii          | Aug. 1, 1916   | 74,935    |
| Lassen Volcano   | California      | Aug. 9, 1916   | 82,880    |
| Mesa Verde....   | Colorado        | June 29, 1906  | 42,376    |
| Mt. McKinley..   | Alaska          | Feb. 26, 1917  | 2,200     |
| Platt .....      | Oklahoma        | June 29, 1906  | 848       |
| Rocky Mtn. ...   | Colorado        | Jan. 26, 1915  | 230,000   |
| Sully's Hill.... | No. Dakota      | June 4, 1904   | 960       |



### Rules for Spelling

Words ending in *e* drop that letter before the termination *able*, as in move, movable; unless ending in *ce* or *ge*, when it is retained, as in change, changeable, etc.

Words of one syllable, ending in a consonant, with a single vowel before it, double the consonants in derivatives; as, ship, shipping, etc. But if ending in a consonant with a double vowel before it, they do not double the consonant in derivatives; as troop, trooper, etc.

Words of more than one syllable, ending in a consonant preceded by a single vowel, and accented on the last syllable, double that consonant in derivatives; as commit, committed; but except chagrin, chagrined.

All words of one syllable ending in *l*, with a single vowel before it, have double *ll* at the close; as mill, sell.

All words of one syllable ending in *l*, with a double vowel before it, have only one *l* at the close; as mail, sail.

The words foretell, distill, instill and fulfill, retain the double *ll* of their primitives. Derivatives of dull, skill, will and full also retain the *ll* when the accent falls on these words; as dullness, skillful, willful, fullness.

Words of more than one syllable ending in *l* have only one *l* at the close; as delightful, faithful; unless the accent falls on the last syllable; as befall, etc.

Words ending in *l*, double the letter in the termination *ly*.

Participles ending in *ing*, from verbs ending in *e*, lose the final *e*; as have, having; make, making, etc.; but verbs ending in *ee* retain both; as see, seeing. The word dye, to color, however, must retain the *e* before *ing*.

Adverbs ending in *ly*, and nouns ending in *ment*, retain the *e* final of the primitives; as brave, bravely; refine, refinement; except words ending in *dge*; as acknowledge, acknowledgment.

Nouns ending in *y*, preceded by a vowel, form

their plural by adding *s*; as money, moneys; but if *y* is preceded by a consonant, it is changed to *ies* in the plural; as bounty, bounties.

Compound words whose primitives end in *y*, change the *y* into *i*; as beauty, beautiful.

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### The Use of Capitals

1. Every entire sentence should begin with a capital.

2. Proper names, and adjectives derived from these, should begin with a capital.

3. All appellations of the Deity should begin with a capital.

4. Official and honorary titles begin with a capital.

5. Every line of poetry should begin with a capital.

6. Titles of books and the heads of their chapters and divisions are printed in capitals.

7. The pronoun *I* and the exclamation *O* are always capitals.

8. The days of the week and the months of the year begin with capitals.

9. Every quotation should begin with a capital letter.

10. Names of religious denominations begin with capitals.

11. In preparing accounts, each item should begin with a capital.

12. Any word of very special importance may begin with a capital.

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### The Correct Thing in Correspondence

To fold and direct a letter neatly, and to put on a stamp evenly, and in the right-hand corner.

To put on as many stamps as the weight of the letter or parcel demands.

To enclose a stamp when writing to a stranger on your own business.

To use postal cards for business communications only.

To write legibly and straight.

To spell correctly.

To write numbers, dates, and proper names with special care and distinctness.

To date a *letter* at the beginning, on the right-hand side, but a *note* at the end on the left-hand.

To give one's full address when writing to a person who does not know it, and from whom an answer is desired.

To sign a letter with the full name, or with the last name and initials.

To write "Rev. and Mrs. J. T. Sawyer," or "Dr. and Mrs. Paul Jones."

The correct complimentary closing is: "*Yours truly*," "*Respectfully*," "*Very truly yours*," or "*Very respectfully*," according to the complimentary address used. The correct complimentary address being "*Dear Sir*" to a stranger, or "*My Dear Sir*" to one with whom several communications have been exchanged.

To use typewriter only for business or official correspondence, all social correspondence being written with pen and ink.

To put street address or p. o. box, when known, in lower left-hand corner of envelope, especially if letter goes to a large city.

To write in lower left-hand corner of envelope containing letter of introduction, the words: "*Introducing Mr. Tom Jones*." To address letters in care of another person with the words "*c/o James Smith*" or "*In care of James Smith*," in lower left-hand corner of envelope.

To be as brief as possible and yet make perfectly plain the matters written about.

Never to send money in a letter unless registered; send P. O. or Express Money Orders, New York or Chicago Drafts, and state in letter what form of payment is made and the amount.

To answer all correspondence promptly.

The correct size of letter paper for business use is about  $8\frac{1}{2} \times 11$  inches; folded once, top to bottom, gives  $5\frac{1}{2}$  inches, so that the envelope should be  $5\frac{3}{4}$  or 6 inches. Letter should then be folded twice the other way, so it is about  $3 \times 5\frac{1}{2}$  inches.

### The Solar System

| Name.         | Mean<br>Distance<br>from Sun.<br>Millions of<br>Miles. | Sidereal<br>Period.<br>Days. | Orbit<br>Velocity<br>Miles per Hour. | Mean<br>Diam.<br>Miles. | Mass.<br>Earth=1 |
|---------------|--------------------------------------------------------|------------------------------|--------------------------------------|-------------------------|------------------|
| Sun .....     | .....                                                  | .....                        | .....                                | 866,400                 | 331100           |
| Mercury ....  | 36.0                                                   | 87.969                       | 23 to 35                             | 3,030                   | 0.125            |
| Venus .....   | 67.2                                                   | 224.701                      | 21.9                                 | 7,700                   | 0.78             |
| Earth .....   | 92.8                                                   | 365.256                      | 18.5                                 | 7,918                   | 1.00             |
| Mars .....    | 141.5                                                  | 686.95                       | 15.0                                 | 4,230                   | 0.107            |
| Jupiter ..... | 483.3                                                  | 4332.58                      | 8.1                                  | 86,500                  | 316.0            |
| Saturn .....  | 886.0                                                  | 10759.22                     | 6.0                                  | 71,000                  | 94.9             |
| Uranus .....  | 1781.0                                                 | 30686.82                     | 4.2                                  | 31,900                  | 14.7             |
| Neptune ....  | 2791.6                                                 | 60181.11                     | 3.4                                  | 34,800                  | 17.1             |

### Our Moon

The moon completes her circuit around the earth in 27 days, 7 hours, 43.2 minutes, but in consequence of her motion in common with the earth around the sun, the mean time from new moon to new moon is 29 days, 12 hours, 44.05 minutes, which is called the moon's synodical period. Her mean distance from the earth is 238,850 miles. Her maximum distance, however, may reach 252,830 miles, and the least distance to which she can approach the earth is 221,520 miles. Her diameter is 2,162 miles.

The moon's surface contains about 14,685,000 square miles, or nearly four times the area of Europe. Her volume is 1-49 and her mass 1-81 that of the earth, and hence her density is about 3-5 that of the earth, or about 3 2-5 that of water. At the lunar surface gravity is only 3-20 of what it is at the earth, and therefore a body which weighs 20 pounds here would weigh only 3 pounds there.

The attractive force of the moon acting on the water of our oceans is mainly instrumental in raising them into protuberances or tides. In consequence of the resistance which the movement of the water encounters from continents and islands the tidal wave can never arrive at any place until about one hour after the moon has crossed the meridian of the place.

The moon has no atmosphere and no water. In remote ages the lunar surface was the the-



atre of violent volcanic action, being elevated into cones and ridges exceeding 20,000 feet high. The lunar volcanoes are now extinct. A profound silence reigns over the desolate and rugged surface.

### Annual Income on Investments

| PAR VALUE   | BEING                | \$100,              | BEARING               | INTEREST              | AT                  |
|-------------|----------------------|---------------------|-----------------------|-----------------------|---------------------|
| Price Paid. | Five<br>Per<br>cent. | Six<br>Per<br>cent. | Seven<br>Per<br>cent. | Eight<br>Per<br>cent. | Ten<br>Per<br>cent. |
| \$50        | 10.00                | 12.00               | 14.00                 | 16.00                 | 20.00               |
| 55          | 9.09                 | 10.00               | 12.72                 | 14.55                 | 18.18               |
| 60          | 8.33                 | 10.00               | 11.66                 | 13.33                 | 16.65               |
| 65          | 7.69                 | 9.23                | 10.76                 | 12.30                 | 15.38               |
| 70          | 7.14                 | 8.57                | 10.00                 | 11.42                 | 14.28               |
| 75          | 6.66                 | 8.00                | 9.33                  | 10.66                 | 13.25               |
| 80          | 6.25                 | 7.50                | 8.75                  | 10.00                 | 12.50               |
| 82½         | 6.06                 | 7.27                | 8.48                  | 9.69                  | 11.12               |
| 85          | 5.88                 | 7.05                | 8.23                  | 9.41                  | 11.76               |
| 87½         | 5.71                 | 6.85                | 8.00                  | 9.14                  | 11.42               |
| 90          | 5.55                 | 6.66                | 7.77                  | 8.88                  | 11.11               |
| 92½         | 5.40                 | 6.48                | 7.56                  | 8.64                  | 10.80               |
| 95          | 5.26                 | 6.31                | 7.36                  | 8.42                  | 10.52               |
| 96          | 5.20                 | 6.25                | 7.29                  | 8.33                  | 10.41               |
| 97          | 5.15                 | 6.18                | 7.21                  | 8.25                  | 10.30               |
| 97½         | 5.12                 | 6.15                | 7.17                  | 8.20                  | 10.25               |
| 98          | 5.10                 | 6.12                | 7.14                  | 8.16                  | 10.20               |
| 99          | 5.05                 | 6.06                | 7.07                  | 8.08                  | 10.10               |
| 100         | 5.00                 | 6.00                | 7.00                  | 8.00                  | 10.00               |
| 101         | 4.95                 | 5.94                | 6.93                  | 7.92                  | 9.90                |
| 102         | 4.90                 | 5.88                | 6.86                  | 7.84                  | 9.80                |
| 103         | 4.85                 | 5.82                | 6.79                  | 7.76                  | 9.70                |
| 104         | 4.80                 | 5.76                | 6.73                  | 7.69                  | 9.61                |
| 105         | 4.76                 | 5.71                | 6.66                  | 7.61                  | 9.52                |
| 110         | 4.54                 | 5.45                | 6.36                  | 7.27                  | 9.09                |
| 115         | 4.34                 | 5.21                | 6.08                  | 6.95                  | 8.69                |
| 120         | 4.16                 | 5.00                | 5.83                  | 6.66                  | 8.33                |
| 125         | 4.00                 | 4.90                | 5.60                  | 6.40                  | 8.00                |
| 130         | 3.84                 | 4.61                | 5.38                  | 6.15                  | 7.69                |
| 135         | 3.70                 | 4.44                | 5.18                  | 5.92                  | 7.40                |
| 140         | 3.57                 | 4.28                | 5.00                  | 5.71                  | 7.24                |
| 145         | 3.44                 | 4.13                | 4.82                  | 5.51                  | 6.89                |
| 150         | 3.33                 | 4.00                | 4.66                  | 5.33                  | 6.66                |
| 160         | 3.20                 | 3.75                | 4.40                  | 5.00                  | 6.40                |

## Useful Suggestions in Cases of Accident to Mechanics

BY A. H. ROBINSON, M.D.

**BLEEDING**—If blood spurts from wound, an artery is divided; bind limb tightly above wound with India-rubber tubing, strap, handkerchief, or scarf, or bend the limb forcibly at next joint above wound; or press flat hand or stone where blood is flowing. If blood flows freely but does not spurt, a vein is divided; then apply same measures as in case of wounded artery, but below the wound. If scalp wounded, make a pad of cloth or waste, and bandage very tightly over wound with folded pocket handkerchief.

**BURNS AND SCALDS**—Apply lint, cotton wool, or waste, soaked in oil, or oil and lime water, and bind the same with handkerchief. If necessary to remove clothes, cut them off by running knife or scissors along seams.

**BROKEN LEG**—Pull on leg steadily and firmly until it is of same length as sound one. Roll up a coat or empty sack into form of a cushion; carefully place leg upon it; then bind the two together with scarfs or handkerchiefs. Do not lift patient from the ground until stretcher is close at hand. Take great pains by careful lifting to prevent broken bone coming through skin.

**BROKEN THIGH**—Take hold of ankle and, by steady traction, pull limb to same length as sound one; another person must then tie knees together, and afterward the ankles. Both limbs should then be laid over a sack of straw, or folded coat, so as to bend the knees. Patient should on no account be moved until stretcher or cart is close at hand.

**BROKEN ARM**—Pull arm to length of sound one. Apply two splints, one outside, the other inside, binding them firmly on with pocket handkerchiefs. The best splints are made by folding newspapers to necessary length, binding them above and below seat of fracture; anything hard and light, of suitable size, would act equally well, for instance, wood, pasteboard, twigs, leather, etc.



**BROKEN RIBS**—Cause intense pain when patient breathes; bind roller towel firmly around chest, fastening with pins, or sewing.

**BROKEN COLLARBONE**—Bend arm over front of chest; place it in a sling; bind it in that position by scarf going round chest, outside sling.

**DOG BITES**—Tie a handkerchief or a cord tightly round limb above wound; suck the wound.

**FLESH WOUNDS**—Uncover wound; wash it with clean water; wring out a clean handkerchief or some lint in cold water and lay it over the wound. Then bind in position with handkerchief.

**FAINTING**—From heat, exhaustion, or loss of blood. Keep head low; undo clothing about neck; plenty of fresh air; dash cold water on face and chest; smelling salts, carefully used; a little brandy, when sensibility has returned, excepting in cases of sunstroke, and where means have not been taken to prevent further bleeding.

**INSENSIBILITY**—From blows or wounds on head. Send at once for doctor or take patient to hospital, keeping him on his back, with head raised; undo clothing round neck; do not give brandy.

**INSENSIBILITY**—From being buried in falls of earth or breathing foul gas; proceed as in drowning.

**FITS**—1. If snoring and face flushed, undo clothing round neck, keep head raised, and dash cold water on top of head; hot water bottles to feet. Send for doctor. Do not give brandy.

2. If foaming at mouth and convulsed, undo clothing, apply smelling salts, and prevent patient hurting himself until conscious again.

**DROWNING**—Send for doctor, blankets, and dry clothing. Take wet clothes from upper part of body. Lay patient on his back, with his head on a folded coat for cushion. Draw tongue out of mouth and hold it there. A second person kneels at patient's head and takes hold of both his arms just below the elbows. He then draws them upward over the patient's head and holds them in that position until he counts two; this draws air into the lungs. He then lowers arms to sides

again and presses them firmly inwards, holding them there until he has again counted two; this forces air out of the lungs. Go on doing this until doctor arrives, or until patient breathes naturally. As soon as he does so, rub the limbs in an upward direction with the dry hands, or, better still, with hot flannels. Put patient to bed between blankets, surrounded with hot water bottles. May give him wine or brandy when quite sensible.

**RUPTURE**—or “break of the body.”—Try and push it back with flat hand; keep man on his back. Cold wet cloths laid over rupture will, perhaps, aid its return.

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### **Greatest Battles, Ancient and Modern** (Exclusive of World War)

The Battle of Actium, B. C. 31, in which the combined fleets of Antony and Cleopatra were defeated by Octavius, and imperialism established in the person of Octavius.

The Battle of Arbela, B. C. 331, in which the Persians, under Darius, were defeated by the Macedonians and Greeks under Alexander the Great.

The Battle of Marathon, B. C. 490, in which the Athenians, under Miltiades, defeated the Persians, under Datis.

The Battle of Syracuse, B. C. 413, in which the Athenians were defeated by the Syracusans and their allies.

The Battle of Metaurus, B. C. 207, in which the Carthaginians, under Hasdrubal, were defeated by the Romans, under the Consuls, Caius, Claudius, Nero and Marcus Livius.

The Battle of Philippi, B. C. 42, in which Brutus and Cassius were defeated by Octavius and Antony. The fate of the Republic was decided.

The Battle of Chalons, A. D. 451, in which the Huns, under Attila, called the “Scourge of God,” were defeated by the confederate armies of Romans and Visigoths.

The Battle of Tours, A. D. 732, in which the

Saracens were defeated by Charles Martel. Christendom was rescued from Islam.

Battle of Hastings, A. D. 1066, in which Harold, commanding the English army, was defeated by William the Conqueror of Normandy.

The Battle of Lutzen, 1632, which decided the religious liberties of Germany. Gustavus Adolphus was killed.

The Battle of Blenheim, A. D. 1704, in which the French and Bavarians, under Marshal Tallard, were defeated by the English and their allies, under Marlborough.

The Battle of Pultowa, A. D. 1709, in which Charles XII. of Sweden was defeated by the Russians, under Peter the Great.

On the 21st of October, 1805, the Great Naval Battle of Trafalgar was fought. The English defeated the French and destroyed the hopes of Napoleon as to a successful invasion of England.

The Battle of Waterloo, 1815, in which the French, under Napoleon, were defeated by the allied armies of England, under the Duke of Wellington, and of Prussia, under Prince Blucher.

The Battle of Gettysburg, July, 1863. The deciding battle of the American Civil War. The Confederates under Gen. Lee were defeated by the Union forces under Gen. Meade.

The battles around Metz, August 14, 16, 18, 1870. Bazaine, with 200,000 men, thrown into the fortress by the Germans.

The Battle of Sedan, Sept. 2, 1870. Napoleon III., with 80,000 men, surrendered to the allied Germans.

The naval battle in Manila Bay, May 1, 1898. The American squadron, under Dewey, annihilated the Spanish fleet under Montejo.

The battle of Mukden lasted from Feb. 24 to March 12, 1905. About 450,000 Japanese under Oyama defeated 410,000 Russians under Kuropatkin. The Russians lost 100,000 men, the Japanese 60,000.

The Russian fleet under Rojestvensky was annihilated by the Japanese fleet under Togo on May 27 and 28, 1905, in the Korean Strait.

## Postal Distances and Time of Transit

## NEW YORK TO FOREIGN CITIES.

|                    | Via                | Miles  | Days |
|--------------------|--------------------|--------|------|
| Adelaide.....      | San Francisco .... | 12,845 | 28   |
| Alexandria.....    | London .....       | 6,150  | 12   |
| Algiers.....       | London .....       | 5,030  | 10   |
| Amsterdam.....     | London .....       | 3,985  | 8    |
| Athens.....        | London .....       | 5,655  | 11   |
| Bangkok, Siam....  | London .....       | 13,125 | 41   |
| Barcelona.....     | London .....       | 4,790  | 10   |
| Batavia, Java....  | London .....       | 12,800 | 34   |
| Berlin.....        | London .....       | 4,385  | 8    |
| Beirut, Syria....  | London .....       | 6,475  | 15   |
| Bombay.....        | London .....       | 9,765  | 22   |
| Buenos Ayres.....  | .....              | 8,045  | 24   |
| Calcutta.....      | London .....       | 11,120 | 24   |
| Callao, Peru.....  | Panama .....       | 4,145  | 22   |
| Cape Town.....     | London .....       | 11,245 | 25   |
| Christiania.....   | London .....       | 4,650  | 10   |
| Colon.....         | Panama .....       | 2,281  | 6    |
| Constantinople.... | London .....       | 5,810  | 11   |
| Copenhagen.....    | London .....       | 4,575  | 10   |
| Glasgow.....       | .....              | 2,790  | 8    |
| Hamburg.....       | .....              | 4,820  | 9    |
| Havana.....        | .....              | 1,366  | 3    |
| Havre.....         | .....              | 3,940  | 8    |
| Hongkong.....      | San Francisco .... | 10,590 | 27   |
| Honolulu.....      | San Francisco .... | 5,645  | 12   |
| LaGuayra.....      | .....              | 2,258  | 10   |
| Liverpool.....     | .....              | 3,036  | 7    |
| London.....        | Queenstown .....   | 3,740  | 7    |
| Madrid.....        | London .....       | 4,925  | 9    |
| Manila.....        | San Francisco .... | 10,530 | 31   |
| Mexico City.....   | R. R. ....         | 3,750  | 5    |
| Nassau.....        | .....              | 1,105  | 4    |
| Natal.....         | London .....       | 12,062 | 30   |
| Panama.....        | .....              | 2,355  | 6    |
| Paris.....         | .....              | 4,020  | 8    |
| Petrograd.....     | London .....       | 5,370  | 9    |
| Quebec.....        | .....              | 555    | 2    |
| Queenstown.....    | .....              | 3,250  | 7    |
| Rio De Janeiro.... | .....              | 6,204  | 17   |
| Rome.....          | London .....       | 5,030  | 9    |



|                                  |        |    |
|----------------------------------|--------|----|
| San Juan.....                    | 1,730  | 6  |
| Singapore.....San Francisco .... | 12,240 | 42 |
| Southampton.....                 | 3,680  | 8  |
| Stockholm.....London .....       | 4,975  | 10 |
| Sydney.....San Francisco ....    | 11,570 | 26 |
| Trieste.....London .....         | 4,910  | 10 |
| Valparaiso.....Panama .....      | 5,910  | 22 |
| Venice.....London .....          | 4,780  | 9  |
| Vienna.....London .....          | 4,740  | 9  |
| Yokohama.....San Francisco ....  | 7,348  | 20 |
| Zanzibar.....London .....        | 9,825  | 30 |

### Greatest Altitude in Each State

FROM THE RECORDS OF THE UNITED STATES  
GEOLOGICAL SURVEY.

| State or<br>Territory. | Name of Place        | Height<br>Feet |
|------------------------|----------------------|----------------|
| Alaska.....            | Mt. McKinley.....    | 20,464         |
| California.....        | Mt. Whitney.....     | 14,502         |
| Colorado.....          | Massive Mt. ....     | 14,424         |
| Washington.....        | Mt. Rainier .....    | 14,363         |
| Wyoming.....           | Fremont Peak.....    | 13,790         |
| Utah.....              | Gilbert Peak.....    | 13,687         |
| New Mexico.....        | Truchas Peak.....    | 13,275         |
| Nevada.....            | Wheeler Peak.....    | 13,058         |
| Arizona.....           | San Francisco Mt.... | 12,794         |
| Idaho.....             | Hyndman Peak.....    | 12,078         |
| Montana.....           | Mt. Douglas .....    | 11,300         |
| Oregon.....            | Mt. Hood .....       | 11,225         |
| Texas.....             | Chinati Peak .....   | 7,730          |
| South Dakota.....      | Harney Peak .....    | 7,216          |
| North Carolina.....    | Mt. Mitchell .....   | 6,711          |
| Tennessee.....         | Clingman Dome .....  | 6,619          |
| New Hampshire.....     | Mt. Washington.....  | 6,279          |
| Virginia.....          | Mt. Rogers .....     | 5,719          |
| New York.....          | Mt. Marcy .....      | 5,344          |
| Maine.....             | Katahdin Mt. ....    | 5,200          |
| Nebraska.....          | Hogback Mt. ....     | 5,084          |
| Georgia.....           | Sitting Bull Mt..... | 5,046          |
| Oklahoma.....          |                      | *              |
| West Virginia.....     | Spruce Mt. ....      | 4,860          |
| Vermont.....           | Mt. Mansfield .....  | 4,364          |
| Kentucky.....          | Big Black Mt.....    | 4,100          |
| Kansas.....            | Kanarado .....       | 3,906          |

|                       |                      |       |
|-----------------------|----------------------|-------|
| South Carolina.....   | Rich Mt. ....        | 3,569 |
| Massachusetts.....    | Mt. Greylock .....   | 3,535 |
| Maryland.....         | Great Backbone Mt... | 3,400 |
| Pennsylvania.....     | Blue Knob .....      | 3,136 |
| North Dakota.....     | Summit .....         | 2,830 |
| Arkansas.....         | Magazine Mt. ....    | 2,800 |
| Indian Territory..... | Sugarloaf Mt. ....   | 2,600 |
| Alabama .....         | Cheawha Mt. ....     | 2,407 |
| Minnesota.....        | Mesabi Range .....   | 2,400 |
| Connecticut.....      | Bear Mt. ....        | 2,355 |
| Michigan.....         | Porcupine Mt. ....   | 2,023 |
| Wisconsin.....        | Rib Hill .....       | 1,940 |
| New Jersey.....       | High Knob .....      | 1,799 |
| Missouri.....         | Cedar Gap .....      | 1,683 |
| Iowa.....             | Cazenovia .....      | 1,670 |
| Ohio.....             | Ontario .....        | 1,373 |
| Indiana.....          | Carlos City .....    | 1,208 |
| Illinois.....         | Wadham .....         | 1,023 |
| Rhode Island.....     | Durfee Hill .....    | 805   |
| Mississippi.....      | Forrest .....        | 593   |
| Dist. of Columbia.... | Tenley .....         | 400   |
| Louisiana.....        | Arcadia .....        | 368   |
| Delaware.....         | Southwood .....      | 327   |
| Florida.....          | Mossyhead .....      | 274   |

Note—The heights given are the highest known. In several cases there may be higher ones, but their heights have not been ascertained. \*In Beaver County are points over 5,000 ft. high.

### The Panama Canal

First exploration of route, 1527. Advocated by Humboldt, 1803. Panama railroad built, 1850-1855. DeLesseps Canal Company formed 1879, began work Feb. 24, 1881, failed Dec. 11, 1888. New French Canal Co. formed Oct. 1894. Hay-Pauncefote treaty ratified by Senate Dec. 16, 1901, by Great Britain Jan. 9, 1902. The French Co. offered canal property to the United States for \$40,000,000, Jan. 9, 1902; accepted Feb. 16, 1903. Bill authorizing construction of canal approved June 28, 1902. Canal treaty with Colombia ratified by Senate March 17, 1903, rejected by Colombia Aug. 12, 1903. Revolution in Panama Nov. 3, 1903. Canal treaty with Panama ratified by Sen-



ate Feb. 23, 1904. Canal property transferred to U. S. in Paris April 22, 1904. Bill for government of canal zone approved April 25, 1904. Permanent organization of canal administration in effect April 1, 1914; Col. George W. Goethals first governor; existence of isthmian canal commission ended. First freight barges went through canal from ocean to ocean May 14, 1914. First steamship passed through canal Aug. 13, 1914. Canal opened for general traffic Aug. 15, 1914. Length from deep water to deep water, 50.5 miles—on Isthmus itself 40.5. Width of channel (bottom), 300 to 1,000 feet. Depth, 41 to 45 feet. Locks (pairs), 12. Concrete used, 5,000,000 cubic yards. Passage through canal 10-12 hours. Cost, about \$375,000,000. Americans began work May 4, 1904.

### The States and the Union

#### THIRTEEN ORIGINAL STATES.

| States.      | Ratified the Constitution. | States.        | Ratified the Constitution. |
|--------------|----------------------------|----------------|----------------------------|
| 1 Delaware   | 1787, Dec. 7               | 8 S. Carolina  | 1788, May 23               |
| 2 Pennsylv'a | 1787, Dec. 12              | 9 New Ham.     | 1788, June 21              |
| 3 New Jersey | 1787, Dec. 18              | 10 Virginia    | 1788, June 25              |
| 4 Georgia    | 1788, Jan. 2               | 11 New York    | 1788, July 26              |
| 5 Conn.      | 1788, Jan. 9               | 12 N. Carolina | 1789, Nov. 21              |
| 6 Mass.      | 1788, Feb. 6               | 13 R. Island   | 1790, May 29               |
| 7 Maryland   | 1788, Apr. 28              |                |                            |

#### STATES ADMITTED TO THE UNION.

| States.       | Admitted.     | States.        | Admitted.     |
|---------------|---------------|----------------|---------------|
| 1 Vermont     | 1791, Mar. 4  | 19 Minnesota   | 1858, May 11  |
| 2 Kentucky    | 1792, June 1  | 20 Oregon      | 1859, Feb. 14 |
| 3 Tennessee   | 1796, June 1  | 21 Kansas      | 1861, Jan. 29 |
| 4 Ohio        | 1802, Nov. 29 | 22 W. Virginia | 1863, June 19 |
| 5 Louisiana   | 1812, Apr. 30 | 23 Nevada      | 1864, Oct. 31 |
| 6 Indiana     | 1816, Dec. 11 | 24 Nebraska    | 1867, Mar. 1  |
| 7 Mississippi | 1817, Dec. 10 | 25 Colorado    | 1876, Aug. 1  |
| 8 Illinois    | 1818, Dec. 3  | 26 N. Dakota   | 1889, Nov. 3  |
| 9 Alabama     | 1819, Dec. 14 | 27 S. Dakota   | 1889, Nov. 3  |
| 10 Maine      | 1820, Mar. 15 | 28 Montana     | 1889, Nov. 8  |
| 11 Missouri   | 1821, Aug. 10 | 29 Washing'n   | 1889, Nov. 11 |
| 12 Arkansas   | 1836, June 15 | 30 Idáho       | 1890, July 3  |
| 13 Michigan   | 1837, Jan. 26 | 31 Wyoming     | 1890, July 8  |
| 14 Florida    | 1845, Mar. 3  | 32 Utah        | 1896, Jan. 4  |
| 15 Texas      | 1845, Dec. 29 | 33 Oklahoma    | 1907, Nov. 16 |
| 16 Iowa       | 1846, Dec. 28 | 34 N. Mexico   | 1910, June 20 |
| 17 Wisconsin  | 1848, May 29  | 35 Arizona     | 1910, June 20 |
| 18 California | 1850, Sept. 9 |                |               |

**The United States Copyright Law***Approved March 4, 1909.*

An act to amend and consolidate the acts respecting copyright, in force, provides that any person entitled thereto, upon complying with the provisions of the law, shall have the exclusive right (a) to print, reprint, publish, copy and vend the copyrighted work; (b) to translate the copyrighted work or make any other version of it if it be a literary work; to dramatize it if it be a nondramatic work; to convert it into a novel or other nondramatic work if it be a drama; to arrange or adapt it if it be a musical work; to finish it if it be a model or design, for a work of art; (c) to deliver or authorize the delivery of the copyrighted work if it be a free lecture, sermon, address or similar production; (d) to perform the copyrighted work publicly if it be a drama, or, if it be a dramatic work and not reproduced in copies for sale, to vend the manuscript or any record thereof; to make or to procure the making of any transcription or record thereof by which it may in any manner be exhibited, performed or produced, and to exhibit, perform or produce it in any manner whatsoever; (e) to perform the copyrighted work publicly for profit if it be a musical composition and for the purpose of public performance for profit and to make any arrangement or setting of it in any system of notation or any form of record in which the thought of an author may be read or reproduced.

So far as they secure copyright controlling the parts of instruments serving to reproduce mechanically the musical work the law includes only compositions published after the act went into effect; it does not include the works of a foreign author or composer unless the country of which he is a citizen or subject grants similar rights to American citizens. Whenever the owner of a musical copyright has used or permitted the use of the copyrighted work upon the part of instruments serving to reproduce mechanically the musical work, any other person may make a sim-

ilar use of the work upon the payment to the owner of a royalty of 2 cents on each such part manufactured. The reproduction or rendition of a musical composition by or upon coin-operated machines shall not be deemed a public performance for profit unless a fee is charged for admission to the place where the reproduction occurs.

The works for which copyright may be secured include all the writings of an author.

The application for registration shall specify to which of the following classes the work in which copyright is claimed belongs:

(a) Books, including composite and cyclopedic works, directories, gazetteers and other compilations.

(b) Periodicals, including newspapers.

(c) Lectures, sermons, addresses, prepared for oral delivery.

(d) Dramatic or dramatic-musical compositions.

(e) Musical compositions.

(f) Maps.

(g) Works of art; models or designs for works of art.

(h) Reproductions of a work of art.

(i) Drawings or plastic works of a scientific or technical character.

(j) Photographs.

(k) Prints and pictorial illustrations.

(l) Motion picture photoplays.

(m) Motion pictures other than photo plays.

These specifications do not, however, limit the subject matter of copyright as defined in the law nor does any error in classification invalidate the copyright protection secured.

Copyright extends to the work of a foreign author or proprietor only in case he is domiciled in the United States at the time of the first publication of his work or if the country of which he is a citizen grants similar copyright protection to citizens of the United States.

Any person entitled thereto by the law may secure copyright for his work by publication thereof with the notice of copyright required by the act, and such notice shall be affixed to each

copy published or offered for sale in the United States. Such person may obtain registration of his claim to copyright by complying with the provisions of the act, including the deposit of copies, whereupon the registrar of copyrights shall issue to him a certificate as provided for in the law. Copyright may also be had of the works of an author of which copies are not reproduced for sale by the deposit with claim of copyright of one complete copy, if it be a lecture or similar production, or a dramatic or musical composition; of a title and description, with one print taken from each scene or act, if the work be a motion picture photoplay; of a photographic print if it be a photograph; of a title and description, with not less than two prints taken from different sections of a complete motion picture, if the work be a motion picture other than a photoplay; or of a photograph or other identifying reproduction thereof if it be a work of art, a plastic work or drawing.

After copyright has been secured there must be deposited in the copyright office in Washington, D. C., two complete copies of the best edition thereof, which copies, if the work be a book or periodical, shall have been produced in accordance with the manufacturing provisions of the act, or if such work be a contribution to a periodical for which contribution special registration is requested one copy of the issue or issues containing such contribution. Failure to deposit the copies within a given time after notice from the registrar of copyrights makes the proprietor of the copyright liable to a fine of \$100 and twice the retail price of the work and the copyright becomes void.

The text of all books and periodicals specified in paragraphs (a) and (b) above, except the original text of a book of foreign origin in a language other than English, must, in order to secure protection, be printed from type set within the limits of the United States either by hand, machinery or other process, and the printing of the text and the binding of the books must also



be done within the United States. An affidavit of such manufacture is required.

In the case of each entry the person recorded as the claimant of the copyright shall be entitled to a certificate of registration under seal of the copyright office.

The registrar of copyrights shall receive and the person to whom the services designated are rendered shall pay the following fees: For the registration of any work subject to copyright, \$1, which sum is to include a certificate of registration under seal: Provided, that in the case of photographs the fee shall be 50 cents where a certificate is not demanded. For every additional certificate of registration made, 50c. For recording and certifying any instrument of writing for the assignment of copyright or license, or for any copy of such certificate or license, duly certified, if not over 300 words in length, \$1; if more than 300 and less than 1,000, \$2; if more than 1,000 words in length, \$1 additional for each 1,000 words or fraction thereof of over 300 words. For recording the notice of user or acquiescence specified in the act, 25 cents for each notice of not over fifty words and an additional 25 cents for each additional 100 words. For comparing any copy of an assignment with the record of such document in the copyright office and certifying the same under seal, \$1. For recording the extension or renewal of copyright, 50 cents. For recording the transfer of proprietorship of copyrighted articles, 10 cents for each title of a book or other article in addition to the fee for recording the instrument of assignment. For any requested search of copyright office records, indexes or deposits, 50 cents for each full hour consumed in making such search. Only one registration at one fee shall be required in the case of several volumes of the same book deposited at the same time.

For copyright blanks and additional information as to copyright regulations address the Registrar of Copyrights, Library of Congress, Washington, D. C.



**Secession and Readmission of Confederate States**

|                  | Seceded             | Readmitted     |
|------------------|---------------------|----------------|
| South Carolina.. | Dec. 20, 1860.....  | June 11, 1868  |
| Mississippi..... | Jan. 9, 1861.....   | Feb. 3, 1870   |
| Alabama.....     | Jan. 11, 1861.....  | June 11, 1868  |
| Florida.....     | Jan. 11, 1861.....  | June 11, 1868  |
| Georgia.....     | Jan. 19, 1861.....  | April 20, 1870 |
| Louisiana.....   | Jan. 26, 1861.....  | June 11, 1868  |
| Texas.....       | Feb. 1, 1861.....   | Mar. 15, 1870  |
| Virginia.....    | April 16, 1861..... | Jan. 15, 1870  |
| Arkansas.....    | May 6, 1861.....    | June 20, 1868  |
| North Carolina.. | May 21, 1861.....   | June 11, 1868  |
| Tennessee.....   | June 24, 1861.....  | July .. 1866   |

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**Invisible Ink**

A recipe for making ink whose writing is only visible under the effect of heat. Several invisible inks are made, but the most curious known is that made from cobalt. It may be made to disappear and appear at pleasure. This property is peculiar to inks obtained from cobalt, for all the other kinds are at first invisible until some substance has been applied to make them appear; but when once they have appeared they remain. To prepare this ink, take zaffre and dissolve it in nitro-muriatic acid till the acid extracts from it the metallic part of the cobalt, which communicates to the zaffre a blue color; then dilute the solution, which is very acrid, with common water; if you write with this liquid on paper, the characters will be invisible; but when exposed to sufficient degree of heat they will become green. When the paper has cooled they will disappear. Observe, if the paper be too much heated they will not disappear at all.

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**The Language of Precious Stones**

Diamond, innocence; ruby, beauty and elegance; emerald, success in love; opal, hope; amethyst, sincerity; topaz, fidelity; garnet, constancy and fidelity; turquoise, prosperity; cornelian, contented mind; sardonyx, conjugal felicity; agate, health and long life; bloodstone, courage.

### **The Egyptian Pyramids**

The great pyramid of Gizeh is the largest structure of any kind erected by the hand of man. Its original dimensions at the base were 764 feet square, and its perpendicular height in the highest point is 488 feet; it covers four acres, one rood and twenty-two perches of ground, and has been estimated by an eminent English architect to have cost not less than £30,000,000, which in United States currency would be about \$145,200,000. Internal evidences proved that the great pyramid was begun about the year 2170 B. C., about the time of the birth of Abraham. It is estimated that about 5,000,000 tons of hewn stones was used in its construction and the evidence points to the fact that these stones were brought a distance of about 700 miles from quarries in Arabia.

#### **THE OLDEST OF ALL THE OBELISKS**

is the beautiful one of rosy granite which stands alone among the green fields upon the banks of the Nile, not far from Cairo. It is the grave-stone of a great ancient city which has vanished and left only this relic behind. The city was the Bethshemesh of the Scriptures, the famous On, which is memorable to all Bible readers as the residence of the priest of Potipherah, whose daughter, Assenath, Joseph married. The Greeks called it Heliopolis, the city of the sun, because there the worship of the sun had its chief center and its more sacred shrines.

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### **The Sphinx**

The word sphinx is from the Greek and means the strangler, and was applied to a fabled creature of the Egyptians which had the body of a lion, the head of a man or an animal, and two wings attached to its sides. In the Egyptian hieroglyphics the sphinx symbolized wisdom and power united. It has been supposed that the fact that the overflow of the Nile occurred when the sun was in the constellations Leo and Virgo gave the idea of the combination of form in the sphinx but this idea seems quite unfounded. In Egypt

the reigning monarch was usually represented in the form of a sphinx. The most remarkable sphinx is that near the pyramids at Gizeh. It is sculptured from the rock, masonry having been added in several places to complete the form. It is 172½ feet long by 53 feet high, but only the head of this remarkable sculpture can now be seen, the rest of the form having been concealed by the heaped-up sands of the desert. Numbers of smaller sphinxes have been found in Egypt and also in the sculptures of Assyria, Babylonia and Phœnicia.

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### **History of Cleopatra's Needles**

The two obelisks known as Cleopatra's Needles were set up at the entrance of the Temple of the Sun, in Heliopolis, Egypt, by Thothmes III, about 1831 B. C. We have no means of knowing when they were built, or by whom, except from the inscriptions on them, which indicate the above time. The material of which they were cut is granite, brought from Syene, near the first cataract of the Nile. Two centuries after their erection Rameses II had the stones nearly covered with carvings setting out his own greatness and achievements. Twenty-three years before Christ, Augustus Cæsar moved the obelisks from Heliopolis to Alexandria and set them up in the Cæsarium, a palace which now stands, a mere mass of ruins, near the station of the railroad to Cairo. In 1819 one of these obelisks was presented by the Egyptian Government to England, but, as no one knew how to move them, it was not taken to London until 1878. Subsequently the other obelisk was presented to the United States.

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### **How Cleopatra's Needle Was Brought Over From Egypt**

The work of moving the great Egyptian obelisk from Alexandria to New York was managed by Commander H. H. Goringe of the United States Navy. The officer reached Alexandria October 16, 1879, and at once began the work with

one hundred Arabs, who completed the excavation of the obelisk's pedestal by removing 1,730 cubic yards of earth in about twenty days. The machinery for lowering the monolith was then attached, and the block was laid in a horizontal position. Within the foundation and steps of the pedestal were found stones and implements engraved with emblematic designs, and some delay was caused in order that these might be taken up very carefully to be placed in exactly the same position in the pedestal when re-erected in New York. The obelisk was removed to the wharf and upon the steamer waiting for it by means of cannon balls rolling in metal grooves. The shaft, pedestal, and steps of the obelisk were removed separately, the entire mass weighing 1,470 tons. The steamer bearing this freight left Alexandria June 12, 1880, and arrived at Staten Island July 20. The iron tracks and cannon balls were adjusted after some delay, and on these the monolith was disembarked September 16. Next the rise and fall of the tide was utilized to float it up the North River and land it at the foot of Ninety-sixth street, where it was moved by steam power on tracks with rollers along Tenth avenue and across Eighty-sixth street to Central Park. The track was two miles long and was inclined, the upper part of it being laid on trestle work in order to bring the shaft, when it was to be raised, at a proper height above the pedestal. Pulleys, chains and ropes were then attached and, the signal being given, the great mass was rapidly and gently raised, and in a short time stood firmly upon the base, which had been previously securely put in place.

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### Curiosities of Marriage

Goethe said he married to obtain respectability.

Wycherly, in his old age, married his servant girl to spite his relations.

The joining of right hands in ancient times had the solemnity and validity of an oath.

Giving a ring is supposed to indicate the eternity of the union, seeing that a circle is endless.



Under the Roman empire marriage was simply a civil contract; hence we read of men "putting away" their wives.

Among the Jews the rule was for a maiden to marry on the fourth and a widow on the fifth day of the week—not earlier.

In Jewish marriages the woman is set on the right, but throughout Christendom her place in the ceremony is on the left.

In a Roman marriage the bride was purchased by the bridegroom's payment of three pieces of copper money to her parents.

The custom of putting a veil upon the maid before the betrothal was done to conceal her blushes at the first touch of the man's hand and at the closing kiss.

Kissing the bride the moment the marriage ceremony ended, though not now prescribed by the rubric of the western churches, formerly was an imperative act on the part of the bridegroom.

The early marriage ceremony among the Anglo-Saxons consisted merely of hand fastening, or taking each other by the hand and pledging each other love and affection in the presence of friends and relatives.

An old adage thus lays down the proper days for wedlock:

"Monday for wealth, Tuesday for health, Wednesday the best day of all;

Thursday for crosses, Friday for losses, Saturday no luck at all."

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### Velocity of Elevators

Few persons have any idea of the speed of an elevator. An ordinary guess wouldn't probably come within half a mile a minute of being right. Some elevators run as slowly as eighty feet a minute. The average speed of elevators is about 225 feet a minute. This includes ordinary stoppages. The elevators in the Equitable Building, New York, have a run of 135 feet from basement to top of building, and it takes twenty seconds to make that run without stops. In a day of nine hours these elevators run over ten miles.



### **The First Cable Message**

The first message on the Atlantic cable of 1858, which soon proved a failure, was a congratulatory dispatch from Queen Victoria to President Buchanan. The first message on the successful cable completed in 1866 was the announcement of the treaty of peace between Prussia and Austria. There are now 228 submarine telegraph cables, all told; some of them merely connecting islands with the main shore, or crossing narrow straits and arms of the sea, others thousands of miles in length. There is no direct cable between Africa and South America, but messages can be sent between these portions of the globe via Cuba or the United States and Europe, or in some cases simply via Portugal through the Brazilian and South African cables. The French Atlantic cable was laid in 1879, by a company chartered in France, and composed at first chiefly of French capitalists. The greater part of each of the Atlantic cables lies too far below the surface to be disturbed by storms, tides or currents. The shore ends are made much stronger and heavier to withstand the action of waves and currents and in some cases, near the landings, they are weighted to hold them in place, a thing entirely unnecessary in deep water.

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### **History of the Telephone**

The principle of the telephone that sounds could be conveyed to a distance by a distended wire was demonstrated by Robert Hook in 1667, but no practical application was made of the discovery until 1821, when Professor Wheatstone exhibited his "Enchanted Lyre," in which the sounds of a music box were conveyed from a cellar to upper rooms. The first true discoverer of the speaking telephone, however, was Johann Philipp Reis, a German scientist and professor in the institute at Friedrichdorf. April 25, 1861, Reis exhibited his telephone at Frankfort. This contains all the essential features of the modern telephone, but as its commercial value was not at all comprehended, little attention was paid to it.

Reis, after trying in vain to arouse the interest of scientists in his discovery, died in 1874, without having reaped any advantage from it, and there is no doubt that his death was hastened by the stress of mind caused by his continual rebuffs. Meanwhile, the idea was being worked into more practical shape by other persons, Professor Elisha Gray and Professor A. G. Bell, and later by Mr. Edison. There is little doubt that Professor Gray's successful experiments considerably antedated those of the others, but Professor Bell was the first to perfect his patent. February 12, 1877, Bell's articulating telephone was tested by experiments at Boston and Salem, Mass., and was found to convey sounds distinctly from one place to the other, a distance of eighteen miles. This telephone was exhibited widely in this country and in Europe during that year, and telephone companies were established to bring it into general use. Edison's carbon "loud-speaking" telephone was brought out in 1878. It is not worth while to go into details of the suits on the subject of priority of invention. The Examiner of Patents at Washington, July 21, 1883, decided that Professor Bell was the first inventor, because he was the first to complete his invention and secure a full patent. Since 1878 there have been many improvements in the different parts of the telephone.

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### **The Natural Bridge of Virginia**

It is one of the most wonderful structures nature has left to show her handiwork. The bridge spans the mountain chasm in which flows the little stream called Cedar Creek, the bed of which is more than two hundred feet below the surface of the plain. The middle of the arch is forty-five feet in perpendicular thickness, which increases to sixty at its juncture with the vast abutments. It is sixty feet wide, and its span is almost ninety feet. Across the top is a public road, and being on the same level with the neighboring country, one may cross it in a coach without being aware of the interesting place.

### Great Fires of History

The loss of life and property in the willful destruction by fire and sword of the principal cities of ancient history—Nineveh, Babylon, Persepolis, Carthage, Palmyra, and many others—is largely a matter of conjecture. The following is a memorandum of the chief conflagrations of the current era:

In 64 A. D., during the reign of Nero, a terrible fire raged in Rome for eight days, destroying ten of the fourteen wards. The loss of life or destruction of property is not known.

In 70 A. D. Jerusalem was taken by the Romans and a large part of it given to the torch, entailing an enormous destruction of life and property.

In 1106 Venice, then a city of immense opulence, was almost wholly consumed by a fire, originating in accident or incendiarism.

In 1212 the greater part of London was burned.

In 1666 what is known as the Great Fire of London raged in the city from Sept. 2 to 6, consuming 13,200 houses, with St. Paul's Church, 86 parish churches, 6 chapels, the Guild Hall, the Royal Exchange, the Custom House, 52 companies' halls, many hospitals, libraries, and other public edifices. The total destruction of property was estimated at \$53,652,500. Six lives were lost, and 436 acres burnt over.

In 1679 a fire in Boston burned all the warehouses, eighty dwellings, and vessels in the dock yards; loss estimated at \$1,000,000.

In 1700 a large part of Edinburgh was burned; loss unknown.

In 1728 Copenhagen was nearly destroyed; 1,650 houses burned.

In 1736 a fire in St. Petersburg burned 2,000 houses.

In 1729 a fire in Constantinople destroyed 12,000 houses, and 7,000 people perished. The same city suffered a conflagration in 1745, lasting five days; and in 1750 a series of three appalling fires—one in January, consuming 10,000 houses; another in April, destroying property to the value of \$5,000,000, according to one historian, and according to

another \$15,000,000; and in the latter part of the year, another, sweeping fully 10,000 houses more out of existence. It seemed as if Constantinople was doomed to utter annihilation.

In 1751 a fire in Stockholm destroyed 1,000 houses; and another fire in the same city in 1759 burned 250 houses, with a loss of \$2,420,000.

In 1752 a fire in Moscow swept away 18,000 houses, involving an immense loss.

In 1758 Christiania suffered a loss of \$1,250,000 by conflagration.

In 1760 the Portsmouth (Eng.) dock yards were burned, with a loss of \$2,000,000.

In 1764 a fire in Konigsburg, Prussia, consumed the public buildings, with a loss of \$3,000,000; and in 1769 the city was almost totally destroyed.

In 1763 a fire in Smyrna destroyed 2,600 houses, with a loss of \$1,000,000; in 1772 a fire in the same city carried off 3,000 dwellings and 3,000 to 4,000 shops, entailing a loss of \$20,000,000; and in 1776 there were 4,000 shops, mosques, magazines, etc., burned.

In 1776, six days after the British seized the city, a fire swept off all the west side of New York city, from Broadway to the river.

In 1771 a fire in Constantinople burned 2,500 houses; another in 1778 burned 2,000 houses; in 1782 there were 600 houses burned, in February, 7,000 in June, and on Aug. 12, during a conflagration that lasted three days, 10,000 houses, 50 mosques, and 100 corn mills, with a loss of 100 lives. Two years later a fire, on March 13, destroyed two-thirds of Pera, the loveliest suburb of Constantinople, and on Aug. 5 a fire in the main city, lasting twenty-six hours, burned 10,000 houses. In this same fire-scourged city, in 1791, between March and July, there were 32,000 houses burned, and about as many more in 1795; and in 1799 Pera was again swept with fire, with a loss of 13,000 houses.

In 1784 a fire and explosion in the dockyards, Brest, caused a loss of \$5,000,000.

But the greatest destruction of life and property by conflagrations of which the world has



anything like accurate records must be looked for within the last 100 years. Of these the following is a partial list of instances in which the loss of property amounted to \$3,000,000 and upward:

| Dates. | Cities                                                                     | Property Destroyed |
|--------|----------------------------------------------------------------------------|--------------------|
| 1802—  | Liverpool .....                                                            | \$ 5,000,000       |
| 1803—  | Bombay .....                                                               | 3,000,000          |
| 1805—  | St. Thomas .....                                                           | 30,000,000         |
| 1808—  | Spanish Town .....                                                         | 7,500,000          |
| 1812—  | Moscow, burned five days; 30,800<br>houses destroyed.....                  | 150,000,000        |
| 1816—  | Constantinople, 12,000 dwellings,<br>3,000 shops .....                     | .....              |
| 1820—  | Savannah .....                                                             | 4,000,000          |
| 1822—  | Canton, nearly destroyed.....                                              | .....              |
| 1828—  | Havana, 350 houses.....                                                    | .....              |
| 1835—  | New York ("Great Fire").....                                               | 15,000,000         |
| 1837—  | St. John, N. B.....                                                        | 5,000,000          |
| 1838—  | Charleston, 1,158 buildings.....                                           | 3,000,000          |
| 1841—  | Smyrna, 12,000 houses.....                                                 | .....              |
| 1842—  | Hamburg, 4,219 buildings, 100<br>lives lost .....                          | 35,000,000         |
| 1845—  | New York, 35 persons killed....                                            | 7,500,000          |
| 1845—  | Pittsburgh, 1,100 buildings....                                            | 10,000,000         |
| 1845—  | Quebec, May 28, 1,650 dwellings.                                           | 3,750,000          |
| 1845—  | Quebec June 28, 1,300 dwellings .....                                      | .....              |
| 1846—  | St. Johns, Newfoundland.....                                               | 5,000,000          |
| 1848—  | Constantinople, 2,500 buildings..                                          | 15,000,000         |
| 1848—  | Albany, N. Y., 600 houses.....                                             | 3,000,000          |
| 1849—  | St. Louis .....                                                            | 3,000,000          |
| 1851—  | St. Louis, 2,500 buildings.....                                            | 11,000,000         |
| 1851—  | St. Louis, 500 buildings.....                                              | 3,000,000          |
| 1851—  | San Francisco, May 4 and 5,<br>many lives lost.....                        | 10,000,000         |
| 1851—  | San Francisco, June.....                                                   | 3,000,000          |
| 1852—  | Montreal, 1,200 buildings.....                                             | 5,000,000          |
| 1861—  | Mendoza, destroyed by earth-<br>quake and fire, 10,000 lives<br>lost ..... | .....              |
| 1862—  | St. Petersburg .....                                                       | 5,000,000          |
| 1862—  | Troy, N. Y., nearly destroyed...                                           | .....              |
| 1862—  | Valparaiso, almost destroyed...                                            | .....              |



|                                                                                                            |             |
|------------------------------------------------------------------------------------------------------------|-------------|
| 1864—Novgorod, immense destruction<br>of property .....                                                    |             |
| 1865—Constantinople, 2,800 buildings<br>burned .....                                                       |             |
| 1866—Yokohama, nearly destroyed...                                                                         |             |
| 1865—Carlstadt, Sweden, all consumed<br>but Bishop's residence, hospi-<br>tal, and jail; 10 lives lost.... |             |
| 1866—Portland, Me., half the city....                                                                      | 11,000,000  |
| 1866—Quebec, 2,500 dwellings and 17<br>churches .....                                                      |             |
| 1870—Constantinople, Pera suburb...                                                                        | 26,000,000  |
| 1871—Chicago, 250 lives lost, 17,430<br>buildings burned on 2,124<br>acres .....                           | 192,000,000 |
| 1871—Paris, fired by the Commune...                                                                        | 160,000,000 |
| 1872—Boston .....                                                                                          | 75,000,000  |
| 1873—Yeddo, 10,000 houses.....                                                                             |             |
| 1877—Pittsburgh, caused by riot.....                                                                       | 3,260,000   |
| 1877—St. Johns, N. B., 1,650 dwellings,<br>18 lives lost.....                                              | 12,500,000  |
| 1889—Seattle, Wash. ....                                                                                   | 20,000,000  |
| 1906—San Francisco, caused by an<br>earthquake .....                                                       | 300,000,000 |

From the above it appears that the six greatest fires on record, reckoned by destruction of property, are:

|                                        |               |
|----------------------------------------|---------------|
| San Francisco fire, April 18-21, 1906. | \$300,000,000 |
| Chicago fire, of Oct. 8-9, 1871.....   | 192,000,000   |
| Paris fire, of May, 1871.....          | 160,000,000   |
| Moscow fire, of Sept. 14-19, 1812..... | 150,000,000   |
| Boston fire, Nov. 9-10, 1872.....      | 75,000,000    |
| London fire, Sept. 2-6, 1666.....      | 53,652,500    |
| Hamburg fire, May 5-7, 1842.....       | 35,000,000    |

### Weight of a Cubic Inch of Various Metals in Pounds

Hammered gold, .701 lbs.; cast gold (pure), .698.20; 18 carats fine gold, .567; hammered silver, .382; pure silver, .378; cast steel, .287; cast iron, .263; sheet iron, .279; rolled platinum, .797; wire platinum, .762; hammered platinum, .735; sheet copper, .323; sheet brass, .304; lead, .410; cast tin, .264; cast zinc, .245.

**Elevation of the Lakes Above Tide**

|                               | Feet.  |
|-------------------------------|--------|
| Lake Ontario, elevation.....  | 247.25 |
| Lake Erie, elevation.....     | 573.58 |
| Lake Huron, elevation.....    | 581.92 |
| Lake Michigan, elevation..... | 581.92 |
| Lake Superior, elevation..... | 602.39 |

This is the mean average height of the lakes above tidewater in the Hudson, as shown by fifteen years' observation of Lake Ontario and Lake Erie, and by five years' observation of Lake Huron, Lake Michigan and Lake Superior. There are remarkable periodic variations in the elevation of the lakes, particularly of Lake Erie. There is an annual fluctuation, and other fluctuations occur quite regularly in periods of several years, all of which must be considered in figuring the mean elevation, while they explain in part the differences between earlier reports on this matter.

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**Origin of the Pawnbroker's Sign**

The three golden balls used as a pawnbroker's sign appeared in England in very early times. It was used by the Lombard merchants who emigrated to London from Italy. These established the first pawnbroker establishments, and it is generally held that they adopted the three golden balls to be borne on the arms of the Lombard corporation, from the armorial bearings of the Medici family, which was conspicuous among the Lombard merchant princes of Italy.

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**The First Book in English**

So far as known, the first book ever written in English was a poem—"a Paraphrase"—as it is called—of the creation, the war in heaven, and of the fall of Satan, about the year 657. The author was Caedmon, a convert from paganism to Christianity. After the Norman conquest there seem to have been no books written in English until the reign of King John, which began in 1199. During this reign Layamon, a priest of Worcestershire, wrote a remarkable poem of 32,250 lines, called "Brut."

### **Mechanism of the Heart**

In the human subject the average rapidity of the cardiac pulsation for an adult male is about 72 beats per minute. These beats are more frequent, as a rule, in young children and in women, and there are variations within certain limits in particular persons, owing to peculiarities of organization. It would not necessarily be an abnormal sign to find in some particular individuals the habitual frequency of the heart's action from 60 to 65, or from 75 to 80 a minute. As a rule, the heart's action is slower and more powerful in fully developed and muscular organizations, and more rapid and feebler in those of slighter form. In animals the range is from 25 to 45 in the cold-blooded, and 50 upward in the warm-blooded animals, except in the case of the horse, which has a very slow heart-beat, only 40 strokes a minute. The pulsations of men and all animals differ with the sea level also. The work of a healthy human heart has been shown to equal the feat of raising 5 tons 4 cwt. one foot per hour, or 125 tons in twenty-four hours. The excess of this work under alcohol in varying quantities is often very great. A calculation has been made giving the work of the heart in mileage. Presuming that the blood was thrown out of the heart at each pulsation in the proportion of sixty-nine strokes per minute, and at the assumed force of nine feet, the mileage of the blood through the body might be taken at 207 yards per minute, seven miles per hour, 168 miles per day, 61,320 miles per year, 5,150,880 miles in a life-time of 84 years. The number of beats of the heart in the same long life would reach the grand total of 2,869,776,000.

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### **Flow and Fall of Rivers and Canals**

A river is said to be sluggish when it flows at the rate of about 1 mile an hour; ordinarily swift, 2 miles an hour; very rapid, 5 miles an hour; a torrent, 6 miles an hour.

### Water Pressure

#### FRESH WATER.

One cubic foot of fresh water weighs 1,000 ounces, or 62.5 lbs. avoirdupois, and contains 6.2321 Imperial gallons.

One foot in depth has a pressure of .434 lb. to the square inch.

One foot in depth has a pressure of 62.5 lbs. to the square foot.

35.84 feet in depth has a pressure of 2,240 lbs., or 1 ton to the square foot.

One cylindrical foot weighs 785.4 ounces, or 49.08 lbs. avoirdupois, and contains 4.8947 Imperial gallons.

One cylindrical foot in depth has a pressure of .34 lb. on an area 1 inch in diameter.

One cylindrical foot in depth has a pressure of 49.08 lbs. on an area 1 foot in diameter.

45.64 cylindrical feet in depth has a pressure of 2,240 lbs. or 1 ton on an area 1 foot in diameter.

The quantity of water in 1 inch in depth of rainfall on an Imperial acre of surface is 3,630 cubic feet, which is 22,622,523 Imperial gallons, or 101.28 tons. 3,630 cubic feet of rain falling in 24 hours is 2.52 cubic feet per minute.

#### SEA WATER

One cubic foot weighs 64.25 lbs.

One cylindrical foot weighs 50.46195 lbs.

34.887 feet in depth has a pressure of 2,240 lbs., or 1 ton to the square foot.

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### Sundry Measures of Length

Hair's breadth is the smallest, of which 48 are an inch. Four barley-corns laid breadthways are  $\frac{3}{4}$  of an inch, called a digit, and 3 barley-corns lengthways are an inch. An inch is divided into 12 lines and by mechanics into 8ths. A nail used in cloth measure is  $2\frac{1}{4}$  ins. or the 16th of a yard. A palm is 3 ins., and a span 9 ins. An English Statute mile is 1,760 yds. or 5,280 ft., an Irish mile 2,240 yds., a Scotch mile 1,984 yds., 80 Scotch miles being equivalent to 91 English and 11 Irish to 14 English.



### Harmony of Colors

Every one must have observed that colors, when brought together, mutually set each other off to advantage, while others have altogether a different effect. This must be carefully attended to by every painter who would study beauty or elegance in the appearance of his work.

Whites will set off with any color whatever.

Reds set off best with whites, blacks, or yellows.

Blues set off best with whites or yellows.

Greens set off best with blacks and whites.

Gold sets off best with blacks or browns.

In lettering or edging with gold a white ground has a delicate appearance for a time, but it soon becomes dingy.

The best grounds for gold are Saxon blue, vermillion, and lake.

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### How Looking Glasses Are Made

After the glass has been carefully polished on both sides it is laid on a firm table (usually of stone), with upturned edges, and one or more sheets of tinfoil are laid upon the plate. Quicksilver is then spread over it, and at once forms an amalgam with the tin, making a reflecting surface. The process is simple enough in theory, but requires experience and skill.

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### Discovery of Glass

There is little or nothing known with certainty in regard to the invention of glass. Some of the oldest specimens are Egyptian, and are traced to about 1,500 years before Christ. Transparent glass is believed to have been first used about 750 years before the Christian era. The credit of the invention was given by the ancients to the Phœnicians. The story is a familiar one, of the Phœnician merchants who rested their cooking pots on blocks of natron (sub-carbonate of soda), and found glass produced by the union, under heat, of the alkali and the sand on the shore.



### Qualities of Different Ropes Compared With Italian Hemp

The amount of stretching is that due to the breaking weight. All but the hide ropes are hawser laid.

| Nature.              | Strength.   | Stiffness. | Weight Dry. | Stretching. |
|----------------------|-------------|------------|-------------|-------------|
| Italian Hemp*        |             | 1          | 1           | 1-7 to 1-12 |
| Baltic* . . . . .    | 0.7 to .9   | 0.8 to 0.9 | 1           |             |
| Manilla† . . . . .   | 0.9 to 1    | 0.75       | 0.88        |             |
| Flax . . . . .       | 0.9         | low        | 1.75        |             |
| Colr Hair‡ . . . . . | 0.2 to 0.25 | low        | 0.43        | 1-2 to 1-3  |
| Green Hide§. . . . . | 0.5         | high       | 1           | 0.24        |
| Iron Wire. . . . .   | 3           | high       | 4           | .....       |
| Steel . . . . .      | 6           | high       | 4           | .....       |

\*Become weaker in water—may lose  $\frac{1}{8}$  of their strength if soaked for 72 hours.

†Keeps its strength in water, but cut where knotted or bent short. Wears in tackle; is difficult to tar.

‡Floats for a time in water. Stands exposure to wet well.

§When dry does not stretch.

### Designations of Groups of Animals

The ingenuity of the sportsman is, perhaps, no better illustrated than by the use he puts the English language to in designating particular groups of animals. The following is a list of the terms which have been applied to the various classes:

|                                |                      |
|--------------------------------|----------------------|
| A covey of partridges.         | A cast of hawks.     |
| A nide of pheasants.           | A trip of dottrell.  |
| A wisp of snipe.               | A swarm of bees.     |
| A flight of doves or swallows. | A school of whales.  |
| A muster of peacocks.          | A shoal of herrings. |
| A siege of herons.             | A herd of swine.     |
| A building of rooks.           | A skulk of foxes.    |
| A brood of grouse.             | A pack of wolves.    |
| A plump of wild fowl.          | A drove of oxen.     |
| A stand of plovers.            | A sounder of hogs.   |
| A watch of nightingales.       | A troop of monkeys.  |
| A clattering of cloughs.       | A pride of lions.    |
| A flock of geese.              | A sleuth of bears.   |
| A herd or bunch of cattle.     | A gang of elk.       |
| A bevy of quails.              |                      |

### Height of Twenty-four of the Loftiest Volcanoes in the World

| Name of Volcano.    | Height<br>in feet. | Where located.    |
|---------------------|--------------------|-------------------|
| Sahama.....         | 23,000....         | Peru.             |
| Llullaillac.....    | 21,000....         | Chili.            |
| Arequipa.....       | 20,500....         | Peru.             |
| Cayambi.....        | 19,813....         | Ecuador.          |
| Cotopaxi.....       | 19,408....         | Peru.             |
| Antisana.....       | 19,150....         | Ecuador.          |
| Orizaba.....        | 18,318....         | Mexico.           |
| San Jose.....       | 18,350....         | Chili.            |
| Mt. St. Elias.....  | 18,000....         | Alaska.           |
| Popocatepetl.....   | 17,735....         | Mexico.           |
| Altar.....          | 17,126....         | Ecuador.          |
| Sangai.....         | 17,120....         | Ecuador.          |
| Klintcheoskaia..... | 16,512....         | Kamtschatka.      |
| Iztacihuatl.....    | 15,700....         | Mexico.           |
| Toluco.....         | 15,500....         | Mexico.           |
| Shasta.....         | 14,400....         | United States.    |
| Fujiyama.....       | 14,000....         | Japan.            |
| Mauna Kea.....      | 13,953....         | Sandwich Islands. |
| Mauna Loa.....      | 13,760....         | Sandwich Islands. |
| Teneriffe.....      | 12,236....         | Canary Islands.   |
| Mt. Hood.....       | 11,934....         | United States.    |
| Peak of Tahiti..... | 19,865....         | Friendly Islands. |
| Mt. Etna.....       | 10,874....         | Sicily.           |
| Mt. St. Helens..... | 10,158....         | United States.    |

Some of the foregoing list have long been extinct.

Three of the best known volcanoes, Vesuvius, 3,978 ft.; Hecla, 3,970 ft., and Stromboli, 3,000 ft., are of much less elevation than many others altogether unfamiliar.

### To Preserve Boiler Tubes

A coating of red lead and boiled linseed oil applied to boiler tubes acts as an excellent preservative.

A lacquer of linseed oil caoutchouc applied to the walls of a steam boiler prevents the adhesion of sediment so that the scale admits of easy removal.

### The Height of Waves

The story of waves that run mountain high is a very great exaggeration. Many important measurements have been made, all of which show that the common estimate of the height of waves is due to imagination and fear. The measurements of Scoresby, which are regarded as very accurate, proved that during storms waves in the Atlantic rarely exceed forty-three feet from hollow to crest, the distance between the crests being five hundred and sixty feet, and their speed thirty-two and one-half miles an hour. More recent observations taken in the Atlantic give from forty-four to forty-eight as the highest measured waves; but such heights are rarely reached, and, indeed, waves exceeding thirty feet are very seldom encountered. The monsoon waves at Kurrachee breakwater works were found to dash over the wall to the depth of thirteen feet or about forty feet above the mean sea level. The greatest height of waves on the British coast were those observed in Wick Bay—so famous for the exceptionally heavy seas which roll into it—being thirty-seven and one-half to forty feet. Green seas to the depth of twenty-five feet poured over the parapet of the breakwater at intervals of from seven to ten minutes, each wave, it is estimated, being a mass of 40,000 tons of water, and this continually for three days and nights. During severe storms the waves used to ride high above the top of Smeaton Eddystone tower, while at the Bell Rock the seas, with easterly storms, envelop the tower from base to balcony—a height of 400 feet.

### The Coal Area of the World

The coal area of the world is estimated as follows:

|                  | Sq. Mi. |                  | Sq. Mi. |
|------------------|---------|------------------|---------|
| United States... | 335,000 | Germany .....    | 1,800   |
| British America. | 18,000  | Belgium .....    | 513     |
| Great Britain... | 12,000  | Rest of Europe.. | 10,000  |
| Spain .....      | 4,000   | China .....      | 340,000 |
| France .....     | 2,000   | Japan .....      | 15,000  |

### Function of the Atmosphere

To evaporate water enough annually from the ocean to cover the earth, on the average, five feet deep with precipitation; to transport it from one zone to another; to cause it to fall in the right places, at suitable times, and in the proportions due, is one of the offices of the grand atmospherical machine. This water is evaporated principally from the torrid zone. Supposing it all to come thence, we shall have, encircling the earth, a belt of ocean 3,000 miles in breadth, from which this atmosphere evaporates a layer of water annually 16 feet in depth. To hoist up as high as the clouds and lower down again all the water in a lake 16 feet deep, 3,000 miles broad and 24,000 miles long is the yearly business of this invisible machinery. What a powerful engine is the atmosphere! How nicely adjusted must be all the cogs, wheels, springs, and compensations of this exquisite piece of machinery that it never wears out nor breaks down, nor fails to do its work at the right time and in the right way! What a field for investigation, and how singular it is that man is placed at the bottom of this atmospheric ocean from which to commence his research!

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### Annie Laurie

It is interesting to know that the fair heroine of the ballad of "Annie Laurie" was a real character. She was born at Maxwellton, Dec. 6, 1682, and the records of her birth and baptism are still extant. The following record of the origin of the song is taken from a trustworthy old collection of ballads edited by Charles Kirkpatrick Sharpe, of Hoddam, Eng., who says: "Sir Robert Laurie, first baronet of the Maxwellton family (created March 27, 1685), by his second wife had three sons and four daughters, of whom Annie was much celebrated for her beauty, and made a conquest of Mr. Douglas, of Fingland, who composed the verses, under an unlucky star—for the lady some time after (in 1709) married Mr. Ferguson, of Craigdarroch."



### Facts About Ourselves

The average weight of male adults is 140 pounds, of women about 124 pounds. The average height of American recruits is about five feet nine inches; the average height of well-built men is five feet nine inches; of women five feet four inches. One inch of height should add two pounds of weight. The specific gravity of the body ranges from 0.950 to 1.0030. The heart weighs 260 grammes in women and 330 grammes ( $10\frac{1}{4}$  ounces) in men; the average weight is 292 grammes. The period of its maximum weight is between 50 and 80. The amount of blood in the body is one-thirteenth the weight of the body, or five or six quarts, or eleven or twelve pounds. A man dies when he has lost a fifth of his blood. The heart with each contraction ejects six ounces of blood from each ventricle, at a pressure in the ventricle of one-fourth of an atmosphere. The heart sends all the blood around the body twice every minute, or in about thirty-five contractions. A deadly poison injected into a vein kills in 15 seconds, on the average; injected under the skin, in 4 minutes. A cubic millimeter of the blood contains 5,000,000 blood cells in men, 4,500,000 in women. There are 300 red cells to every one white blood cell. The red cells have an average diameter of 1-3200 inch, the white cells 1-2500 inch. The specific gravity of the blood is 1.055. The frequency of the pulse in the new-born is 150; in infants of 1 year, 110; at 7 to 14 years, 85; in adult man, 72; in women, 80. The respirations are one-fourth as rapid as the pulse.

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### Weight of a Million Dollars

The United States gold dollar contains 25.8 troy grains. A troy pound contains 5,760 troy grains, but the ordinary pound of currency, avoirdupois, weighs 7,000 troy grains. Therefore, \$1,000,000 in United States gold coin weigh 3,686.4 pounds, avoirdupois. A United States standard silver dollar weighs 412.5 troy grains, and \$1,000,000 in United States silver coin of the present standard weigh 56,931 pounds, avoirdupois.



### Cubic Feet in a Ton of Coal

There is a difference between a ton of hard coal and one of soft coal. For that matter, coal from different mines, whether hard or soft, differs in weight, and consequently in cubic feet measure, according to quality. Then there is a difference according to size. To illustrate, careful measurements have been made of Wilkesbarre anthracite, a fine kind of hard coal, with the following results:

| Size of<br>coal: | Cu. ft. in ton<br>of 2,240 lbs. | Cu. ft. in ton<br>of 2,000 lbs. |
|------------------|---------------------------------|---------------------------------|
| Lump .....       | 33.2                            | 28.8                            |
| Broken .....     | 33.9                            | 30.3                            |
| Egg .....        | 34.5                            | 30.8                            |
| Stone .....      | 34.8                            | 31.1                            |
| Chestnut .....   | 35.7                            | 31.9                            |
| Pea .....        | 36.7                            | 32.8                            |

For soft coal the following measures may be taken as nearly correct; it is impossible to determine any exact rule, even for the same district: Briar Hill coal, 44.8 cubic feet per ton of 2,240 pounds; Pittsburgh, 47.8; Wilmington, Ill., 47; Indiana block coal, 42 to 43 cubic feet.

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### The Greatest Depth of the Ocean Ever Measured

The deepest verified soundings are those made in the Pacific Ocean, some miles off the Island of Guam, in the Marriane Islands, 5,269 fathoms or 31,614 feet. Deeper water has been reported south of the Grand Bank of Newfoundland, over 37,000 feet in depth, but additional soundings in that locality did not corroborate this. The ship Challenger, which in 1872-74 made a voyage round the globe for the express purpose of taking deep-sea soundings in all the oceans, found the greatest depth touched in the Pacific Ocean less than 3,000 fathoms; but since then, near Porto Rico, 4,561 fathoms or 27,366 feet, have been sounded, and the lowest in the Atlantic, 3,875 fathoms.

### When Coal Was Discovered in America

There is strong reason to believe that the first discovery of coal on this continent was made in Illinois by the early French explorers some time between 1673 and 1680. James McFarlane, author of the "Coal Regions of America," says: "It is remarkable that the first discovery of coal in America of which there is any account in a printed book was made so far in the interior as Illinois by Father Hennepin more than two hundred years ago." Hennepin's map, accompanying the edition of his journal published in 1698, locates a coal mine in the bluffs of the Illinois River near Ottawa, where an inferior quality of bituminous coal comes to the surface. Referring to this record by Hennepin, R. C. Taylor, another high authority in economic geology, says: "This is the earliest notice on record of the existence of coal in America."

### Distances From Atlantic to Pacific Ports

Before and after the completion of the Panama canal.

| TO           | San Francisco | Callao | Valparaiso | Yokohama via San Francisco | Shanghai via San Francisco | Manila via San Francisco | Melbourne via Sydney |
|--------------|---------------|--------|------------|----------------------------|----------------------------|--------------------------|----------------------|
| New York—    |               |        |            |                            |                            |                          |                      |
|              | 13,244*       | 9,702  | 8,461      | 17,780                     | 18,910                     | 19,530                   | 15,135               |
|              | 5,299†        | 3,359  | 4,630      | 9,835                      | 10,885                     | 11,585                   | 10,427               |
| New Orleans— |               |        |            |                            |                            |                          |                      |
|              | 13,644        | 10,102 | 8,861      | 18,180                     | 19,310                     | 19,930                   | 15,535               |
|              | 4,698         | 2,758  | 4,029      | 9,234                      | 10,284                     | 10,984                   | 9,826                |
| Hamburg—     |               |        |            |                            |                            |                          |                      |
|              | 14,244        | 10,702 | 9,461      | 18,780                     | 19,910                     | 20,530                   | 16,135               |
|              | 8,467         | 6,527  | 7,798      | 13,003                     | 14,053                     | 14,753                   | 13,595               |
| Liverpool—   |               |        |            |                            |                            |                          |                      |
|              | 13,844        | 10,302 | 9,061      | 18,380                     | 19,510                     | 20,130                   | 15,735               |
|              | 8,038         | 6,098  | 7,369      | 12,574                     | 13,624                     | 14,324                   | 13,166               |
| Bordeaux—    |               |        |            |                            |                            |                          |                      |
|              | 13,691        | 10,157 | 8,916      | 18,235                     | 19,365                     | 19,985                   | 15,590               |
|              | 7,938         | 5,998  | 7,269      | 12,474                     | 13,524                     | 14,224                   | 13,066               |
| Antwerp—     |               |        |            |                            |                            |                          |                      |
|              | 13,979        | 10,437 | 9,196      | 18,515                     | 19,645                     | 20,265                   | 15,870               |
|              | 8,188         | 6,248  | 7,519      | 12,724                     | 13,774                     | 14,474                   | 13,316               |

Note.—\*First figures of former distances. †Second figures after completion of the Panama canal.

### **Railways and Their History**

The earliest reference to railways on the plan of making a distinct surface and track for wheels is found in Roger North's "Life of Lord Keeper North," where it is stated that at Newcastle-on-Tyne, in 1676, the coals were conveyed from the mines to the banks of the river "by laying rails of timber exactly straight and parallel; and bulky carts were made with four rollers fitting those rails, whereby the carriage was made so easy that one horse would draw four or five chaldrons." One hundred years afterwards—viz., about 1776—Mr. Carr constructed an iron railroad at the Sheffield Colliery. Railways or tramways of wood, upon which wagons were propelled by animal power, were thus in use as early as the seventeenth century, but it was not until near the beginning of the present century that iron was substituted for wood. James Watt first conceived the idea of utilizing steam for locomotion. This was probably about 1780. George Stephenson, however, was the first to introduce steam locomotive power into practical use. This was in 1825.

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### **Velocity of Ocean Waves**

The velocity of waves is said to depend primarily upon the power and continuance of the wind, but it is greatly modified by and bears ascertainable relation to their magnitude and the depth of water over which they travel. It has been calculated by Airy that a wave 100 feet in breadth, and in water 100 feet deep, travels at the rate of about 15 miles an hour; one 1,000 feet broad, and in water 1,000 feet deep, at the rate of 48 miles; one of 10,000 feet in breadth, and in water 10,000 feet deep, will sweep forward with a velocity of not less than 154 miles an hour. Bache stated, as one of the effects of an earthquake at Samoda, on the Island of Nippon, in Japan, that the harbor was first emptied of water, and then came an enormous wave which again receded and left the harbor dry. This occurred several times.

**Height of the Principal Monuments and Towers**

| Places.            | Names.                                   | Feet. |
|--------------------|------------------------------------------|-------|
| Paris .....        | Eiffel .....                             | 984   |
| Washington, D. C.  | Washington Monument.....                 | 555   |
| Egypt .....        | Pyramid of Cheops.....                   | 486   |
| Belgium .....      | Antwerp Cathedral.....                   | 476   |
| France .....       | Strasburg Cathedral.....                 | 474   |
| Egypt .....        | Pyramid of Cephrenes.....                | 456   |
| Rome .....         | St. Peter's Church.....                  | 448   |
| Germany .....      | St. Martin's Church, Landshut.           | 411   |
| England .....      | St. Paul's Church, London.....           | 365   |
| England .....      | Salisbury Cathedral.....                 | 400   |
| Italy .....        | Cathedral at Florence.....               | 386   |
| Lombardy .....     | Cathedral at Cremona.....                | 397   |
| Germany .....      | Church at Fribourg.....                  | 386   |
| Spain .....        | Cathedral of Seville.....                | 360   |
| Lombardy .....     | Cathedral of Milan.....                  | 355   |
| Holland .....      | Cathedral of Utrecht.....                | 356   |
| Egypt .....        | Pyramid of Sakkarah.....                 | 356   |
| Bavaria .....      | Cathedral of Notre Dame,<br>Munich ..... | 348   |
| Venice .....       | St. Mark's Church.....                   | 328   |
| Italy .....        | Assinelli Tower, Bologna.....            | 272   |
| New York.....      | Trinity Church.....                      | 284   |
| Hindustan .....    | Column of Delhi.....                     | 262   |
| China .....        | Porcelain Tower, Nankin.....             | 260   |
| Paris .....        | Church of Notre Dame.....                | 224   |
| Massachusetts .... | Bunker Hill Monument.....                | 221   |
| Italy .....        | Leaning Tower of Pisa.....               | 179   |
| Baltimore .....    | Washington Monument.....                 | 175   |
| Paris .....        | Monument, Place Vendome....              | 153   |
| Italy .....        | Trajan's Pillar, Rome.....               | 151   |
| Paris .....        | Obelisk of Luxor.....                    | 110   |

**How Sugar Is Refined**

The method used by the best sugar refineries is substantially as follows: The raw sugar is dissolved in large cisterns on the ground floor, enough hot water being added to produce a specific gravity of 1.25. The solution is then drawn through a connecting pipe having a coarse wire strainer into large pumps, by which it is pumped into the highest story of the building, usually the seventh or eighth. It there passes into vessels heated by steam coils to a temperature of about 210 F. Milk of lime is added to the solution in these pans for the purpose of neutralizing any acid which it may contain. From these pans the liquid passes down to the next floor, where it is filtered through a series of bags, each made of



two thicknesses of cloth, an outer one of coarse and an inner one of fine cotton. The bags are inclosed in boxes to prevent cooling. After leaving these the syrup is run through filters of bone-black, which absorbs all the coloring matter left in it. After leaving these, it is pumped into vacuum pans, large vessels heated by steam and exhausted by air pumps. The pressure being thus reduced, the liquid is boiled at a lower and lower temperature until, at 140 degrees, evaporation is complete and the sirup rapidly crystallizes into sugar. This is the process by which the best white sugar is made, while poorer qualities are prepared by a method less complete.

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### **The Desert of Sahara**

The Sahara is a very large country, some parts of which are much depressed, while other parts are very high. In the central and southern parts are mountains and tablelands ranging from 500 to 7,000 feet above the level of the sea. The lowest part of the country is in its northern part, and there is a large tract, filled with salt lagunes, which is from 50 to 100 feet below sea level. This tract was no doubt in remote times a part of the Mediterranean Sea, to which it was joined by the Gulf of Gabes. The deposits on the coast in the lapse of time made the arm of the sea an inland lake, which, being fed by no inlets, in the natural course of things was dried up by evaporation. Another tract, also below sea level, is in the eastern half of the Sahara, south of the tableland of Barca. This last low country was also probably once a part of the Mediterranean, joining it west of the modern delta of the Nile, at the head of the Gulf of Syrtis Major.

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### **To Protect Polished Steel or Iron From Rust**

Go over the surface with paraffine, or steep the iron for a few moments in a solution of soda acidulated with hydrochloric acid. The result is a blue-black coating not affected by air or water.



### Divorces in Different Countries

In Australia divorces have never been sanctioned. . .

Divorces are scarcely ever known to occur in modern Greece.

In Hindostan either party for a slight cause may leave the other party and marry.

In the olden times the Jews had a discretionary power of divorcing their wives.

Divorces are scarcely allowed in Thibet, unless with the consent of both parties. Remarriage is forbidden.

In Cochin China the parties desiring divorce break a pair of chopsticks in the presence of witnesses, and the thing is done.

Two kinds of divorces are granted in Circassia. By the first the parties can immediately marry again, by the second not for a year.

Among some tribes of American Indians the sticks given witnesses of the marriage are broken as a sign of divorce.

If the wife of a Turkoman asks his permission to go out, and he says, "Go," without adding "Come back again," they are divorced.

In Siberia if a man is dissatisfied with the most trifling acts of his wife he tears a cap or veil from her face and that constitutes a divorce.

In Siam the first wife may be divorced, but not sold as the others may be. She may claim the first child. The others belong to the husband.

Among the Moors, if the wife does not become the mother of a boy, she may be divorced with the consent of the tribe and can marry again.

In the Arctic region a man who wants a divorce leaves home in anger and does not return for several days. The wife takes the hint and departs.

In China divorces are allowed in all cases of criminality, mutual dislike, jealousy, incompatibility of temperament, or too much loquacity on the part of the wife.

Among the Tartars if the wife is ill-treated she complains to the magistrate, who, attended by the principal people, accompanies her to the house and pronounces a divorce.

### The Hall of Fame

March 5, 1900, the Council of New York University accepted a gift of \$100,000, afterward increased to \$250,000, from a donor, whose name was withheld, for the erection and completion on University Heights, New York City, of a building to be called "The Hall of Fame for Great Americans." A structure was accordingly built in the form of a semi-circle, 506 feet long, 15 feet wide, and 170 feet high, connecting the University Hall of Philosophy with the Hall of Languages. Within the colonnade 150 panels, each 2 by 8 feet, are to be placed, to bear the names of Americans deemed the greatest in their respective fields.

Under the rules adopted only persons born on what is now United States territory and who shall have been dead ten or more years are eligible to be chosen. Fifteen classes of citizens were recommended for consideration, towit: Authors and editors, business men, educators, inventors, missionaries and explorers, philanthropists and reformers, preachers and theologians, scientists, engineers and architects, lawyers and judges, musicians, painters and sculptors, physicians and surgeons, rulers and statesmen, soldiers and sailors and distinguished men and women outside the above classes. Fifty names were to be inscribed on the tablets at the beginning, and five additional names every fifth year thereafter, until the year 2000, when the 150 inscriptions will be completed.

Prior to 1920 the following had been chosen, 57 in number:

George Washington  
Abraham Lincoln  
Daniel Webster  
Benjamin Franklin  
Ulysses S. Grant  
John Marshall  
Thomas Jefferson  
Ralph W. Emerson  
H. W. Longfellow  
Robert Fulton

Mark Hopkins  
Elias Howe  
William E. Channing  
Gilbert Stuart  
Asa Gray  
John Quincy Adams  
James Russell Lowell  
William T. Sherman  
James Madison  
John G. Whittier

|                     |                       |
|---------------------|-----------------------|
| Horace Mann         | Alexander Hamilton    |
| Henry W. Beecher    | Louis Agassiz         |
| James Kent          | John Paul Jones       |
| Joseph Story        | Mary Lyon             |
| John Adams          | Emma Willard          |
| Washington Irving   | Maria Mitchell        |
| Jonathan Edwards    | Harriet Beecher Stowe |
| Samuel F. B. Morse  | Oliver Wendell Holmes |
| David G. Farragut   | Edgar Allan Poe       |
| Henry Clay          | Roger Williams        |
| Nathaniel Hawthorne | James Fenimore Cooper |
| George Peabody      | Phillips Brooks       |
| Robert E. Lee       | William Cullen Bryant |
| Peter Cooper        | Frances E. Willard    |
| Eli Whitney         | Andrew Jackson        |
| John J. Audubon     | Joseph Henry          |
| George Bancroft     | Rufus Choate          |
| John Lothrop Motley | Daniel Boone.         |
| Francis Parkman     |                       |

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### Esperanto

"Esperanto," one of the made-to-order "universal" languages, is so simple that all who have a good knowledge of Latin roots can read it. It is perfectly regular and it is pretty. As far as possible, it does away with inflections, so that its whole grammar may be learned within a few minutes.

Here is the Esperanto grammar: All present tenses end in *as*, past in *is*, future in *os*, conditional in *us*. *Ami*, to love; *amanta*, loving; *aminta*, having loved; *amonta*, about to love; *amata*, being loved; *amita*, having been loved; *mi amas*, I love; *vi amis*, you loved; *il amos*, he will love; *ni amus*, we should love; *ili estas amata*, they are loved. Similarly, *esti*, to be; *havi*, to have; *veni*, to come. All nouns end in *o*, all adjectives in *a*, all adverbs in *e*. Thus *bono*, a good thing; *bona*, good; *bone*, well. Antonyms are formed by prefixing *mal*, and their use is greatly extended: bad is *malbona*; slowly, *malrapide*. *Homo* is a man, *homoj* (pronounced homoy) is men, *la homimoj*, the women. The objective case follows the verb, but it is not used after

prepositions. It is indicated by the suffix *n*. *Mi ne havas amikon*, I have not a friend. Questions begin with *cu* (pronounced choo) : *Cu vi ekiras*, are you going out? More is *pli* : *pli bona*, better; *malpli bona*, less good; *pli malbona*, worse. Very interesting is the word building : *Ig* means causing or making; *bona*, good; *bonigo*, making good; *plibonigo*, making better, improvement.

Esperanto is greatly preferable to Volapuk, as it is much more regular, has far less inflections, and its roots, being mostly Latin, are intelligible to all the educated people in Europe and America.

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### Why Easter Is So Irregular

The apostolic age had scarcely passed before discussions occurred and dissensions ensued as to the time of celebrating Easter. It was early held by the great majority of Christian churches that much importance should be attached to the day of Christ's resurrection, and it is easy to understand how the violent controversies were brought about when difference of opinion grew in reference to the time of year when the feast should be observed. The question was brought before the Council of Nice, and finally settled for the whole church by adopting the rule which makes Easter day to be always the first Sunday after the full moon which happens upon or next after March 21, and if the full moon happens on Sunday Easter day is the Sunday after; so that, by this arrangement Easter may come as early as March 22 or as late as April 25.

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### Eclipse

A celestial body is said to be eclipsed when it is immersed in the shadow of another. Thus a lunar eclipse is caused by the moon entering the shadow of the earth. Jupiter's satellites are frequently eclipsed by passing through the shadow cast by their primary. A solar eclipse is due to the interposition of the moon between the sun and earth, and the phenomenon is strictly an occultation, but the former term is retained for convenience.



**Legal Holidays in the Various States**

Jan. 1. New Year's Day—In all states except District of Columbia and Massachusetts.

January 8. Anniversary of the Battle of New Orleans—In Louisiana.

Feb. 12. Lincoln's Birthday—In California, Colorado, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Jersey, New York, North Dakota, New Mexico, Oregon, Pennsylvania, South Dakota, Utah, Washington, West Virginia, Wyoming.

Feb. 22. Washington's Birthday—All states.

Feb. 14. Mardi Gras—In Louisiana.

March 2. Anniversary of Texan Independence—In Texas.

April 21. Anniversary of the Battle of San Jacinto—In Texas.

April 26. Memorial Day (Confederate)—In Georgia, Alabama, Florida and Mississippi.

May 30. Decoration Day—In Arizona, California, Colorado, Connecticut, Dakota, Iowa, Illinois, Kansas, Kentucky, Massachusetts, Michigan, Nevada, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, Wisconsin, and Wyoming.

July 4. Independence Day—In all states.

September, First Monday. Labor Day—In Colorado, District of Columbia, Illinois, Massachusetts, New Jersey and New York.

October 12. Columbus Day—In Alabama, Arizona, Arkansas, California, Connecticut, Colorado, Delaware, Idaho, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Virginia, Washington, West Virginia.

November. General Election Day. First Tuesday after First Monday—All states except District of Columbia.

November (last Thursday) Thanksgiving Day—Is observed in all the states, though in Ne-



braska and some others it is not a statutory holiday.

December 25. Christmas Day—In all states.

Sundays and Fast Days (whenever appointed) are legal holidays in nearly all the states.

Arbor Day is a legal holiday in Idaho and Kansas, the day being set by the Governor. Arbor Day is also a legal holiday in Rhode Island but does not affect the payment of notes, etc.

Every Saturday after 12 o'clock noon is a legal holiday in New York.

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### **Dimensions of Bartholdi's Statue of Liberty**

The figure of this statue, which is made of repousse, or hammered work—that is, thin sheets of copper beaten into shape and fastened about an iron skeleton—is  $110\frac{1}{2}$  feet high and weighs 100,000 pounds. The uplifted torch, however, is raised 26 feet, and adding to this the pedestal, the tip of the torch is raised 220 feet from the ground. The pedestal is of stone, 82 feet high. Some idea of the enormous proportions of the statue may be given by the fact that the forefinger is 8 feet long, and 4 feet in circumference at the second joint. The head is 14 feet high and 40 persons can stand in it.

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### **The Wives of Columbus**

Christopher Columbus was twice married. His first wife was Felipa Munnis Perestrelle, daughter of an able Captain of Prince Henry of Portugal, called the "Navigator." He married her in 1471. His father-in-law's charts, globes, etc., helped to mature his plans of discovery. Diego, who accompanied his father on the occasion when they were reduced to such straits that Columbus begged at the monastery of La Rabida for bread and water for the child, was the only issue of this marriage. This wife died in 1483 or thereabout. He next married Beatriz Enriquez, at Cordova in 1487. She was the mother of his second son, Fernande Columbus, who in time became his father's biographer.

### **How to Tell the Age of a Horse by His Teeth**

At 3 years old the horse should have the central permanent nippers growing, the other two pairs wasting, six grinders in each jaw above and below, the first and fifth level, the others and the sixth protruding. The sharp edges of the new incisors will be very evident, compared with the old teeth. As the permanent nippers wear and continue to grow, a narrow portion of the cone-shaped tooth is exposed by the attrition of the teeth on each other. The mark will be wearing out, and the crowns of the teeth will be sensibly smaller than at 2 years. Between 3½ and 4 years the next pair of nippers will be changed, the central nippers will have attained nearly their full growth, a vacuity will be left where the second stood, and the corner teeth will be diminished in breadth, worn down, and the mark in the center of the tooth will become faint. The second pair of grinders will be shed. At 4 years the central nippers will be fully developed, the sharp edge somewhat worn off, and the mark somewhat wider and fainter. The next pair will be up, but they will be small, with a mark deep and extending quite across them. The corner nippers will be larger than the inside ones, but smaller than before and flat, and the mark nearly effaced. The sixth grinders will have risen to a level with the others, and the tushes will begin to appear. At 5 the horse's mouth is almost perfect. The corner nippers are quite up, the long, deep mark irregular in the inside, and the other nippers will bear evident tokens of increased wear. The tushes are nearly grown, the sixth molar is up, and the third molar is wanting. This last circumstance will prevent the deception of attempting to pass a late 4-year-old as a 5-year-old. At 6 the mark on the central nippers is worn out. At 7 the mark is worn out in the four central nippers, and fast wearing away in the corner teeth. The tushes are rounded at the points and edges and beginning to get round inside. At 8 years old the tushes are rounded in every way, the mark is gone from all the bottom

nippers. There is nothing remaining in them that can afterward clearly show the age of a horse. After this the only guides are the nippers in the upper jaw. At 9 the mark will be worn from the middle nippers, from the next pair at 10, and from all the upper nippers at 11. At 9 the center nippers are round instead of oval. At 10 the others begin to become rounded, at 11 the second pair are much rounded, at 13 the corner ones have the same appearance, at 14 the faces of the center nippers become somewhat triangular, at 17 they are all so.

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### **Discovery of Gold in California**

On January 19, 1848, John W. Marshall was building a mill for himself and Sutter on the south fork of the American River, fifty-four miles east of Sutter's Fort. This mill, it was expected, would supply the ranches and settlements with pine lumber. On this particular morning Marshall picked up from the bedrock of the race of the mill a small piece of yellow metal which weighed about seventeen grains. It was malleable, heavier than silver, and in all respects resembled gold. Marshall showed the piece in the afternoon to those who were working at the mill. The result of the discussion which ensued was the rejection of the gold theory. Marshall, however, was not satisfied, and afterward tested it with nitric acid and found it was actually gold. He discovered pieces like it in all the surrounding gulches wherever he dug for it. The news of the discovery soon spread, and in April reports of the find were published. Sutter's mill became the district of attraction, which was afterward named Coloma, or Colluma, from a tribe of Indians who lived in the neighborhood. The prospectors from there scattered in all directions, and by the month of June the discoveries had extended to all the forks of the American, Weber Creek, Hangtown Creek, the Cosumnes, the Mokelumne, Tuolumne, the Yuba, and Feather River, and the news had gone almost to the ends of the earth.

### The Graves of the Presidents

Only one ex-President, William H. Taft, is still living. All who died in active service as Chief Magistrate have passed away in the early part of their term. General Harrison filled the office only one month. General Taylor died after having served sixteen months. Mr. Lincoln died a little over a month after his second inauguration, and General Garfield filled the office but six months and fifteen days, while McKinley died within a still shorter time of his second term.

George Washington died Dec. 14, 1799, at Mount Vernon, Va., of acute laryngitis, and was buried at Mount Vernon. His remains were placed in the present receptacle in 1827.

John Adams died July 4, 1826, of old age, at Quincy, Mass., and all that is mortal of the second President lies beneath the Unitarian Church. The church was completed in 1828, and the body was removed from the family vault in the cemetery across the way.

Thomas Jefferson died July 4, 1826, in the course of nature, say the chroniclers, at Monticello, Va., and was buried in a thick growth of woods near a road leading from that place to Charlottesville.

James Madison died June 28, 1836, at Montpelier, Va., of old age and was buried in the center of a large level field at that place.

James Monroe died July 4, 1831, at New York, of old age, and in 1858 his remains were removed by the State of Virginia to Hollywood Cemetery at Richmond, Va.

John Quincy Adams died at Washington, D. C., Feb. 21, 1848, from a stroke of paralysis, and is buried in the same place with his father beneath the Unitarian Church at Quincy, Mass.

Andrew Jackson died June 8, 1845, from an attack of dropsy at the Hermitage, his famous home, on the Lebanon pike, eleven miles from Nashville, Tenn., and was interred there.

Martin Van Buren died near Kinderhook, N. Y., July 24, 1862, of old age, and rests in the family lot in the little cemetery there.



William Henry Harrison died at Washington, D. C., from the effects of the fatigue and excitement of the campaign, April 4, 1841, and his body was buried at North Bend, near Cincinnati.

John Tyler died at Richmond, Va., Jan. 8, 1862, and was buried in Hollywood Cemetery, where Monroe lies.

James K. Polk died June 5, 1849, at Nashville, Tenn., of cholera, and was buried in the garden of the old family homestead in that city.

Zachary Taylor died at Washington, D. C., of a bilious disorder, July 9, 1850. His remains were removed several times; first they were placed in a cemetery at Washington, then in a lot on the Taylor homestead near Louisville, then to Cave Hill Cemetery and they are now in the cemetery at Frankfort, Ky.

Millard Fillmore died at Buffalo, N. Y., March 8, 1874, and was buried at Forest Lawn Cemetery, three miles from that city.

Franklin Pierce died at Concord, N. H., Oct. 8, 1869, and his remains rest in the old cemetery on Maine street.

James Buchanan's death occurred at Wheatland, Pa., June 1, 1868, and his remains rest in Woodward Hill Cemetery, a mile or so west of Lancaster, on the Marietta turnpike.

Abraham Lincoln died at Washington, D. C., April 15, 1865, shot to death by John Wilkes Booth, and his resting place is Oak Ridge Cemetery, Springfield, Ill., where stands probably the finest monument ever erected to a President of the United States.

Andrew Johnson passed away at Greenville, Tenn., of paralysis, July 31, 1875, and was buried there on a spot selected by himself.

General U. S. Grant died at Mt. McGregor, N. Y., July 23, 1885, aged 63. Remains deposited in a magnificent tomb, Riverside Park, N. Y.

James A. Garfield died Sept. 19, 1881, and was buried in Lake View Cemetery, Cleveland, Ohio.

Chester A. Arthur died in New York, Nov. 18, 1886, of kidney troubles, and is buried at Albany, N. Y.



Rutherford B. Hayes died Jan. 17, 1893, at Fremont, O., where he is buried.

Benjamin Harrison died on March 13, 1901, in Indianapolis, Ind., where he is buried.

William McKinley died Sept. 14, 1901, in Buffalo, N. Y., and was entombed in Canton, O.

Grover Cleveland died June 24, 1908, in Princeton, N. J., where he is buried.

Theodore Roosevelt died Jan. 6, 1919, at Sagamore Hill, Oyster Bay, Long Island, and was buried at Oyster Bay in a cemetery overlooking Long Island Sound.

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### Chicago's Great Fires

There were 2,100 acres of land burned over, nearly all of which area was thickly covered with buildings. There were nearly 18,000 buildings destroyed, of which about 2,400 were stores and factories; and there were but few short of 100,000 people rendered homeless by the calamity. The extreme length of the burnt district was  $3\frac{3}{4}$  miles, and its greatest width a little over a mile. The fire of July, 1874, originated on South Clark street, between Taylor and Twelfth, and spread northeast to Michigan avenue. It was estimated that in this fire about fifty acres were burned over, many of the new buildings which had been erected after the great fire of 1871 having been leveled. The loss of property in the great fire of 1871 was \$192,000,000, after allowing \$4,000,000 for salvage on foundations of buildings. This estimate does not include the shrinkage of real estate values, or the large loss to mercantile interests by the interruption of trade consequent upon the destruction of stocks and business facilities. Mr. Colbert estimated the grand aggregate not very much below \$290,000,000. The loss occasioned by the fire of 1874 was estimated as follows: The net loss to insurance companies was officially placed at \$2,244,970, or 40 per cent. of the entire loss, making an estimated total loss of \$5,612,425. The cash contributions to Chicago within three months after the fire amounted to \$4,200,000.

### World's Largest Steamships

The ten largest ocean liners in the world are the following:

**BISMARCK.**—One of the German “mystery ships” partially completed during the World War. Believed to have been designed originally to carry troops for the invasion of Great Britain, perhaps of the United States as well. Some statements give size as follows: 50,000 tons; length, 911 feet; beam, 96 feet. Others, however, make it the largest ship in the world with the following dimensions: Tonnage, 56,000; length, 1,000 feet. It was originally named the *Europa* and was found unfinished during the armistice. We cannot vouch for these figures, however, as the larger figures at least are based upon rumors circulated during the chaotic armistice period. The same is true of the other “mystery ships” named.

**LEVIATHAN.**—Formerly the German liner *Vaterland*. Seized by the United States during the war and renamed *Leviathan*. Carried thousands of American troops to and from Europe. Tonnage, 54,282; length, 920 feet; beam, 100 feet.

**IMPERATOR (German).**—Tonnage, 52,000; length, 898 feet; beam, 97 feet.

**AQUITANIA (British).**—Tonnage, 47,000; length, 901 feet; beam, 92 feet.

**OLYMPIC (British).**—Tonnage, 45,000; length, 890 feet; beam, 92 feet.

**COLUMBUS.**—Another of the German “mystery ships.” Estimates of tonnage vary from 35,000 to 40,000 tons. Length is given as 696 feet and beam as 76 feet.

**TIRPITZ.**—German “mystery ship” said to have a tonnage of about 35,000.

**HINDENBURG.**—German “mystery ship” said to have a tonnage of about 35,000.

**MAURETANIA (British).**—Sister ship of the *Lusitania*, sunk by Germany. Tonnage, 32,000; length, 790 feet; beam, 83 feet.

GEORGE WASHINGTON.—One of the great German liners seized by the United States in the port of New York. Original name retained. Tonnage, 25,570; length, 722 feet; beam, 78 feet. Transported thousands of American troops to and from Europe.

It will be noted that there is not a single American-built vessel in the above list.

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### Immigration

The first wave of immigration to the United States was mainly English, along the Atlantic seaboard, 1607 to about 1640. The second, chiefly Irish and Scotch with some Germans, settled in the "back country" of New York, Pennsylvania, Virginia, and the Carolinas, from about 1720 to the American Revolution, and has been estimated at 500,000 in number. "These," says Lecky, the English historian, "ultimately bore the chief part in the War of Independence." The present wave began about 1820, when 8,000 arrived, chiefly from northern Europe; 23,000 came in 1830 and 84,000 in 1840. The potato famine in Ireland in 1846, the German revolution in 1848, and the discovery of gold in California increased the numbers; and 370,000 arrived in 1850 and 425,000 in 1854, mostly Irish and Germans, with some English. The Civil War and the panic of 1873 caused a reduction, but with good times the number reached 800,000 in 1882, while the 1,000,000 mark was reached in 1905, 1906, 1907, 1910, 1913, and 1914. The European war reduced it to 325,000 in 1915. The southern countries of Europe are now the chief sources of immigration. There are at present 13,000,000 foreign born in the country and 18,000,000 more with parents born abroad, one-third of the whole country. The city with the largest percentage of foreign born is Fall River, Mass., with 42.7 per cent; Lowell, Mass., is second, with 40.9 per cent; New York, third, with 40.8, or 1,944,357; Boston fourth, Paterson, N. J., fifth, Chicago sixth, and Bridgeport, Conn., seventh.

**The Mayflower's Passengers**

A true list of the male passengers who landed at Plymouth in the Mayflower :

|                       |                       |
|-----------------------|-----------------------|
| Mr. Isaac Allerton,   | John Howland,         |
| John Alden,           | Mr. Stephen Hopkins,  |
| John Allerton,        | Edward Leister,       |
| Mr. William Bradford, | Mr. Christopher       |
| Mr. William Brewster, | Martin,               |
| John Billington,      | Mr. William Mullin,   |
| Peter Brown,          | Edward Margeson.      |
| Richard Britterage,   | Degony Priest         |
| Mr. John Carver,      | Thomas Rogers         |
| Francis Cook,         | John Rigdale,         |
| James Chilton         | Capt. Miles Standish, |
| John Crackston,       | Edward Tilly,         |
| Richard Clarke,       | John Tilly,           |
| Edward Dotey,         | Thomas Tinker,        |
| Francis Eaton,        | John Turner,          |
| Thomas English,       | Mr. Edward Winslow,   |
| Mr. Samuel Fuller,    | Mr. William White,    |
| Edward Fuller,        | Mr. Richard Warren,   |
| Moses Fletcher,       | Thomas Williams       |
| John Goodman,         | Gilbert Winslow.      |
| Richard Gardiner,     |                       |

And servants as follows :

|          |           |           |
|----------|-----------|-----------|
| Carter,  | Langmore, | Sampson,  |
| Coper,   | Latham,   | Story,    |
| Ely,     | Minter,   | Thompson, |
| Holbeck, | More,     | Trevore,  |
| Hooke,   | Prower,   | Wilder.   |

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**Fish**

The increase of fish is said to be in the following proportion : A flounder of two ounces contains 133,407 eggs or spawn; one of twenty-four ounces, 1,357,403. Herrings, weighing from four to five and three-quarter ounces, have from 21,-285 to 36,960. Lobsters from 14 to 36 ounces contain 21,099. Mackerel, 20 ounces, 454,961. Prawn, about 3,806. Shrimps, from 2,849 to 6,807. Smelts, from 14,441 to 38,278. Sole of five ounces, 38,772; one of 14½ ounces contains 100,362. To which may be added the cod, which produces 36,686,700, and the ling, 19,248,625.



### Notes on Working of Steel

1. Good, soft heat is safe to use if steel be immediately and thoroughly worked.

It is a fact that good steel will endure more pounding than any iron.

2. If steel be left long in the fire, it will lose its steely nature and grain, and partake of the nature of cast iron.

Steel should never be kept hot any longer than is necessary to the work to be done.

3. Steel is entirely mercurial under the action of heat, and a careful study of the tables will show that there must, of necessity, be an injurious internal strain created whenever two or more parts of the same piece are subjected to different temperatures.

4. It follows, that when steel has been subjected to heat not absolutely uniform over the whole mass, careful annealing should be resorted to.

5. As the change of volume due to a degree of heat increases directly and rapidly with the quantity of carbon present, therefore high steel is more liable to dangerous internal strains than low steel, and great care should be exercised in the use of high steel.

6. Hot steel should always be put in a perfectly dry place, of even temperature, while cooling. A wet place in the floor might be sufficient to cause serious injury.

7. Never let anyone fool you with the statement that his steel possesses a peculiar property which enables it to be "restored" after being "burned;" no more should you waste any money on nostrums for restoring burnt steel.

For "burned" steel, which is oxidized steel, there is only one way of restoration and that is through the knobbling fire or the blast furnace.

"Overheating" and "restoring" should only be allowable for purposes of experiment. The process is one of disintegration and is always injurious.

8. Be careful not to overdo the annealing process; if carried too far it does great harm, and

it is one of the commonest modes of destruction which the steelmaker meets in his daily troubles.

It is hard to induce the average worker in steel to believe that very little annealing is necessary, and that very little is really more efficacious than a great deal.

The mean strength of American wrought iron is 45,900 lbs.; English 43,900. Ultimate extension of wrought iron is 600th part of its length. The working strain is from  $1/6$  to  $1/4$  the mean strength.

Resistance to flexure, acting evenly over the surface, equals one-half the tensile strength. Bars of wrought iron will expand or contract 151200th of their length for each degree of heat. With range of temperature of this country ( $-20$  to  $+120^{\circ}$ )  $=140^{\circ}$ , will expand or contract 1080th part of its length, equal to a force of 20,740 lbs., or  $9\frac{1}{4}$  tons per square inch of section. Tensile strength increases in from 1 to 6 reheatings and rollings, from 43,904 lbs. to 60,824 lbs; in from 6 to 12, is reduced again to 43,904.

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### Locating a Break in an Ocean Cable

Simple as are the methods of locating mid-ocean breaks in cables so that a vessel may sail to the point of rupture, they are not popularly understood. If the metallic conductor were broken, the surmounting insulation remaining perfect, the electrostatic charge of the cable, or the amount of electricity which it absorbs in becoming charged, is electrically weighed by building up an artificial line until the current flows equally into the cable and such artificial line. If the insulating covering of the wire is broken, the current will flow freely from the conductor to the surrounding water, and its strength, if the power of the battery is known, definitely measures the electrical resistance and consequently the length of the conductor. In other words, the battery power, divided by the indicated current strength, gives the line's resistance and therefore its length.

## POINTS OF LAW

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### Negotiable Instruments

*Introduction.*—The laws governing mercantile transactions, and particularly such as relate to negotiable instruments, are, in the main, of very ancient origin, and are derived for the most part from the well established usages of merchants, which have been adopted, sanctioned and confirmed by the courts, and in many instances re-declared by statute. These usages and customs constitute what is called, in the language of the books, the law merchant.

*Promissory Notes.*—A note of hand, as it is called, is a written promise to pay to a person certain, his order, or bearer, at a specified time, a given sum of money. To render it negotiable, that is, so that it may be transferred by endorsement or delivery, it must be payable to "order" or "bearer," and unless these words appear it will not be negotiable. Further, the promise must be absolute and uncoupled with any condition, and the time of payment must be certain and not dependent upon any contingency. Again, the promise must be for a definite sum and must be payable in money. These are all of the essence of negotiability. Failing in any of the foregoing particulars, the note may still be good as a contract, but it will not be a negotiable instrument.

It may be written upon anything capable of receiving written characters, in any language susceptible of translation, and with any substance that will leave a permanent mark; hence a note written in pencil is just as valid as one written with ink. It need not be dated, for delivery gives it effect, although a date is customary and proper, and when no time is specified it is payable on demand. It need not be signed at the bottom, provided the name of the maker elsewhere appears and was written with intent to bind, as: "I, John Smith, promise," etc., but the better way is to subscribe the note.

The payee must be named or designated, unless

the note is drawn to bearer, and if drawn to the maker's own order it possesses no validity until he has indorsed it. A note payable to bearer is transferable by simple delivery and passes from hand to hand without anything further, and the same is true of a note payable to the payee's order after he has indorsed it. In such a case any holder may write over such indorsement an order to pay to himself. But if indorsed in full, that is to pay to some person certain, it can only be transferred by the subsequent indorsement of such designated person.

It is customary to write notes for "value received," but this is not necessary, for a negotiable note imports a consideration, and, except as between the parties, want of consideration cannot be shown if the note was negotiated in good faith and before maturity, while as between the parties consideration may always be disproved, even though expressed. The better practice, however, is to write them as expressing consideration.

One who places his name on the back of a note as an indorser thereby enters into an undertaking with his assignee, as well as others into whose hands the note may come, that he will pay it if the maker does not; but he may protect himself against the claims of subsequent indorsers by making his endorsement "without recourse." On the other hand, a party, by simply receiving and passing a note while under a blank indorsement, and without putting his name to it, assumes no responsibility in relation to it.

The holder or indorsee of a note has a right of action against every one whose name appears on the same, whether as maker or indorser, but it is his duty to present the note promptly at maturity and demand payment; if payment is refused, he should immediately notify the indorsers, and a failure so to do will, in most cases, discharge the indorser from liability. He should further use all reasonable means to compel payment by the maker before resorting to the indorsers, and the law only excuses him from this duty where at the time of maturity the maker is hope-



lessly insolvent and a suit against him would be unavailing.

Prior to maturity, any person who takes a note without notice of any defect, and pays therefor a valuable consideration, will be protected against any equities existing in favor of the maker; but one who takes it as a mere volunteer, paying no value therefor, or one who receives it after it has become due, even though in good faith, and for value, will take it subject to all its infirmities, and any defense that would have been availing as against the payee may be interposed as to them.

*Due Bills* are not distinguishable in general effect from promissory notes, and are governed by the same rules and assignable in the same manner.

*Certificates of Deposit* are, in effect, promissory notes, and subject to the same rules and principles applicable to that class of paper.

*Warehouse Receipts* are not technically negotiable, but stand in the place of the property itself; the delivery of the receipts has the same effect, in transferring the title to the property, as the delivery of the property itself. They are, however, frequently declared negotiable paper by statute.

*Drafts.*—The draft, or bill of exchange, is the oldest form of negotiable paper, and is said to have existed as early as the first century. Drafts are governed by the same general rules as notes, and all the remarks of the foregoing paragraphs concerning negotiability are equally applicable here.

It is the duty of the holder of a bill to present it for acceptance without delay, and if it is payable at sight, or at a certain time after sight, no right of action will accrue against any person until it has been so presented. If it be not accepted, when properly presented, or, if accepted, be not paid when due, the further duty devolves on the holder to have it regularly protested by a notary public. This is essential, however, only in case of foreign bills, and is not required for inland

exchange or notes. Simple notice in the latter case is sufficient.

*Checks.*—A check on bank is a species of bill of exchange, but is governed by somewhat different rules from the ordinary bill. It need not be presented for acceptance, for a bank is bound to pay at any time if it have funds of the drawer on deposit; nor is it material that the holder delay presentment for payment. A check should, however, be presented immediately; this the drawer has a right to expect, and the delay is at the holder's risk, for if the bank fails in the meantime, the loss falls on him, if the drawer had funds on deposit sufficient to have paid the check had it been timely presented.

Certifying a check practically amounts to an acceptance and binds the bank as an acceptor.

Checks should be drawn to order to guard against loss and theft, and at the same time it acts as a receipt of the payee. A check is not a payment until it has been cashed.

In paying a forged check the loss falls on the bank, which is bound to know the signature of its own depositors, and, in like manner, if the check has been fraudulently raised, the drawer is chargeable only with the original amount.

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### Landlord and Tenant

*The Relation* of landlord and tenant exists by virtue of a contract for the use or occupation of lands or tenements, either for a definite period, for life, or at will. It is usually created by express contract, but its existence will be implied by law whenever there is an ownership of land on the one hand and an occupation of it by permission on the other. In every such case it will be presumed that the occupant intends to compensate the owner for such use. While the relation may be inferred from a variety of circumstances, the most obvious acknowledgment is the payment of rent. If a tenant under an express contract hold over after the termination of his term, the landlord may consider him as a tenant, and, indeed, it is so understood, unless he takes

some steps to eject him. If the landlord receives rent from him, or by any other act admits the tenancy, a new leasing begins, and can only be terminated by a proper notice to quit.

The rights and obligations of the parties are usually considered as having commenced from the date of the lease, if there be one, and no other time has been designated as the commencement of the tenancy, or, if there be no date, from the delivery of the papers, and if there be no writings, from the time the tenant entered into possession.

*The Landlord* is bound to protect the possession of his tenant, and to defend him against every one asserting a paramount right. Nor can the landlord do any act himself calculated to disturb the enjoyment of the tenant. He must, unless otherwise agreed, pay all taxes and assessments on the property, and all other charges of his own creation; and if the tenant, in order to protect himself in the enjoyment of the land, is compelled to make a payment which should have been made by the landlord, he may call upon his landlord to reimburse him, or deduct the amount from the rent.

The landlord has no right of possession during the continuance of the lease, nor indeed any substantial rights in the property further than such as may be necessary to protect his reversionary interests. He may go upon the premises peaceably and during reasonable hours, for the purpose of viewing same and ascertaining whether any waste or injury has been committed, and may make such repairs as are necessary to prevent waste; but he is under no obligation to make any repairs, nor does he guarantee that the premises are reasonably fit for the purposes for which they were taken. Nor can the tenant make any repairs at the expense of the landlord in the absence of a special agreement.

The tenant is entitled to all the rights incident to possession, and to the use of all the privileges appendant to the land, and, on the other hand, is personally liable for any misuse of same, or

any nuisance or obstruction he may erect. He must use the premises in such a manner that no substantial injury shall be done them, and that they may revert to the landlord at the end of the term unimpaired by any negligent or willful conduct on his part. He must keep the premises in fair repair at his own expense, but is not bound to rebuild structures which have accidentally become ruinous during his occupation; nor is he answerable for incidental wear and tear, nor accidental fire, or flood.

He must further punctually pay the rent reserved, or if none have been specifically reserved, then such reasonable compensation as the premises are fairly worth. In the absence of special agreement he must pay only for the time he has had the beneficial enjoyment, but if he has agreed to pay for an entire term, as a rule nothing short of an eviction will excuse him from such payment. If he is evicted by a third person, or if the landlord annoys him by the erection of a nuisance, or renders the premises untenable, or makes his occupation so uncomfortable as to justify his removal, he will be discharged from the payment of rent.

The rights and liabilities of the relation are not confined to the immediate parties, but attach to all persons to whom the estate is transferred, or who may succeed to the possession of the premises. A landlord may not violate his tenant's rights by a sale of the property, nor can the tenant avoid his responsibility by assigning his term. The purchaser of the property becomes, in one case, the landlord, with all his rights and remedies, while in the other the assignee of the tenant assumes all the responsibilities of the latter, but the original lessee is not thereby discharged from his obligations.

*The tenancy* may be terminated in a variety of ways. If for a definite time, or conditioned on the happening of a certain event, it expires by its own limitation, and usually, when depending upon the express conditions of a lease, no notice to quit is necessary. If from year to year, or at will, a



notice is always necessary. This must be in writing, and explicitly require the tenant to surrender up the premises. It must be served upon the tenant and afford the statutory notice in regard to time. A breach of any of the covenants of the lease will forfeit the tenant's rights, and when a tenancy has been terminated, by whatever cause, the landlord's right to re-enter becomes absolute.

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### Landlord and Tenant

#### SOME USEFUL DON'TS RESPECTING THEIR RIGHTS AND DUTIES.

Don't rent property except on written lease.

Don't depend on the verbal promises of a landlord.

Don't look to a landlord for general repairs, unless specially provided for in the lease.

Don't remove a fixture (mantel, tile floor, stationary tubs, etc.) unless you expect to restore the premises as you found them.

Don't fail to record a lease when drawn for three years or more.

Don't take a married woman for a tenant unless the laws of the State permit her to make an executory contract.

Don't accept any shorter notice than thirty days when holding by the month.

Don't let premises for illegal use, or arrears of rent upon ejectment will not be collectible.

Don't leave your landlord trade fixtures erected by you on the premises.

Don't erect a building upon foundations sunken into the ground, or it will become part of the realty.

Don't turn the premises over to the landlord until all questions of ownership of fixtures, additions, etc., have been settled in writing.

Don't try to hold back the rent for repairs made by you.

Don't move into premises until you get your written lease or agreement.

Don't allow a provision not to sublet deter you from putting in a tenant of same standing as yourself.

### **The Law of Partnership**

A partnership is an agreement between two or more persons for joining together their money, goods, labor, and skill, or any or all of them, in some lawful commerce or business, under an understanding, express or implied, from the nature of the undertaking, that the parties to the agreement shall share between them the profits and loss arising therefrom.

As stated, a partnership may be formed by oral agreement, but it is always better and safer that it should be based upon written articles of agreement, in which the terms and conditions of the partnership must be stated explicitly.

A single joint transaction, out of which, considered by itself, neither profit nor loss arises, will not create a partnership. Neither is it a partnership where parties make a joint purchase and each then and there takes his proper share of the goods.

No especial form of words is necessary in the preparation of articles of partnership. The agreement should give the full names of the parties to it, the amount of money or goods, or the nature of the services contributed by each; should state clearly the responsibility assumed by each; and should set forth the manner in which the profits arising from the agreement are to be divided. In the absence of such statement the law assigns an equal responsibility, and presumes an equal division of the profits.

The partnership dates from the date of the articles, unless otherwise expressly stated in the agreement.

It is not necessary for each partner to contribute an equal amount of money to be entitled to an equal share of the profits. An individual may contribute his knowledge of the business to be engaged in, or his skill, or his labor, or all three; the other partner or partners contributing a specified sum of money, or the money and their services. The agreement must state exactly what is contributed.

Each and every partner is liable for the debts

or losses of the concern. A partnership may bind one or more partners to bear the losses, and exempt another partner, or other partners, from such losses. This agreement is perfectly valid between the partners, but is not good against creditors unless such creditors in dealing with the firm were aware of this agreement, and based their transactions upon it.

The act of one partner binds all the others. Thus, if one partner gives a negotiable note for the use of the firm, and signs it with his individual name, such signature binds all the other partners.

Each partner is absolutely responsible to every creditor of the firm for the whole amount of the debt. If his agreement with his partners limits the amount of his responsibility he may proceed against them to recover his loss.

A person lending his name to a firm, or causing, or allowing it to be published as one of the partners in a concern, or allowing it to be used as a partner after he has withdrawn from the concern, is in the meaning of the law a partner as regards the claims of creditors.

A person who contributes his money to the capital of a firm and shares its profits, without allowing his name to be used, is termed a secret or silent partner. A person contributing to the capital and sharing the profits of the concern, but taking no active part in its management, is termed a sleeping or dormant partner. Both of these are liable to creditors for the debts of the concern, even though they did not know them to be members of the firm.

The test of partnership is the participation in the profits of the business.

In forming partnerships it is generally the rule to form them for a stated period, which must be expressed in the agreement. This is termed a limited partnership, and expires "by limitation" at the end of the period named. The partners are then free to renew their agreement or not, as they may see fit. Where an agreement does not specify such a period, the law presumes that a general

partnership is intended. This may be dissolved or ended at the pleasure of either party.

A sleeping or dormant partner is not liable for the debts of the firm contracted after his retirement, even though he may give no notice of his retirement, as such debts are not contracted upon the strength of his credit; and as he has no further participation in the profits of the firm, he cannot be called on to share its liabilities.

When a general partnership is dissolved by the wanton or arbitrary withdrawal of either partner, such partner renders himself liable to the others for the loss or damage they may suffer by his action. It is usual to state in the agreement how a general partnership may be terminated, and this stipulation is binding upon all the partners.

A partnership may be dissolved by the unanimous consent of all the partners, or a court of equity may, for sufficient cause, decree the dissolution of such partnership. Dissipation on the part of a partner, dissolute or reckless habits, calculated to endanger the credit or safety of the firm, are sufficient grounds for the other partners to invoke the action of the courts, where a mutual agreement cannot be had.

The death of a partner dissolves the firm, and its affairs must be adjusted as soon as possible thereafter.

The interest of a partner in a business may be attached by his creditors for his private debts. Such attachment operates as a dissolution of the firm.

When a partnership is dissolved, notice of such dissolution should be promptly published in the principal newspapers of the place in which the business was conducted. Notice should also be sent to the correspondents of the firm. In the absence of such precautions each partner continues liable for the acts of the others to all persons who have no knowledge of the dissolution.

The property of a partnership is bound for the debts of the firm. The creditor of one of the partners cannot attach such property until the



debts of the partnership are paid. If, after such payment, a surplus remains, then such creditor may attach his debtor's interest in the partnership funds in payment of his private debt.

The statutes of some of the states recognize another kind of partnership, known as special partnership. A special partner is one who contributes a stated sum of money to the business of the concern, for a designated period. He shares in the profits of the business according to his agreement with the general partners; but his liability is limited to the amount of money contributed by him to the capital of the firm. In order to render a special partnership valid, the partners must publish in one or more newspapers, published in the town in which they do business, an advertisement setting forth the nature and limitation of their partnership, giving the names of the general partners, the name of the special partner, and the exact amount contributed by him to the capital of the concern. This statement must be verified by the signatures of all the parties, and sworn to before a magistrate, and this attestation must form a part of the advertisement. Care must be taken to see that the advertisement states the exact amount contributed by the special partner. An error in this respect, even though it be the fault of the printer, if allowed to remain uncorrected, destroys the effect of the agreement, and renders the special partner a general partner. In such a case he becomes liable for the whole debt of the firm.

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### **The Law of Agency**

An agent is a person who is employed by another to represent him in the performance of certain acts.

One who is legally incompetent to act on his own account may be an agent for a person who is competent. Thus, an alien or a married woman may act as an agent.

A principal is responsible for the acts of his agent when he, by his acts or words, causes the person with whom the agent deals to believe him

to be vested with lawful authority to perform such acts.

A person authorized to perform certain designated acts for another is termed a special agent; one who has authority to represent his principal in all his business, or all his business of a particular kind, is termed a general agent.

If a special agent exceeds his authority, the principal is not bound by his act, because the person dealing with such an agent is bound to inform himself of the extent of such agent's powers. In the case of a general agent, the principal is bound by his acts, even though he exceed his authority, provided that in such acts he does not go beyond the general scope of his business. If, however, the person with whom the agent deals does so with the knowledge that the agent is exceeding his powers, he thereby releases the principal.

Authority may be given to an agent either verbally or in writing. If in writing, it may be either under or without seal. If given by a written instrument, this instrument is termed a power of attorney.

A power of attorney intended to cover much time should be recorded and acknowledged.

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### **How Far the Eye Can See**

The limits of vision vary with elevation, conditions of the atmosphere, intensity of illumination, and other modifying elements in different cases. On a clear day an object one foot above a level plain may be seen at the distance of 1.31 miles; one ten feet high, 4.15 miles; one twenty feet high, 5.86 miles; one 100 feet high, 13.1 miles; one a mile high, as the top of a mountain, 95.23 miles. This allows seven inches (or, to be exact, 6.99 inches) for the curvature of the earth, and assumes that the size and illumination of the object are sufficient to produce an image. Five miles may be taken as the extreme limit at which a man is visible on a flat plain to an observer on the same level.

**BUSINESS LAWS IN DAILY USE**

The following compilation of business law contains the essence of a large amount of legal verbiage:

If a note is lost or stolen it does not release the maker; he must pay it, if the consideration for which it was given and the amount can be proven.

Notes bear interest only when so stated.

Principals are responsible for the acts of their agents.

Each individual in a partnership is responsible for the whole amount of the debts of the firm, except in cases of special partnership.

Ignorance of the law excuses no one.

The law compels no one to do impossibilities.

An agreement without consideration is void.

A note made on Sunday is void.

Contracts made on Sunday cannot be enforced.

A note by a minor is voidable. A contract made with a minor is void.

A contract made with a lunatic is void.

A note obtained by fraud, or from a person in a state of intoxication, cannot be collected.

It is a fraud to conceal a fraud.

Signatures made with a lead-pencil are good in law.

A receipt for money is not always conclusive.

The acts of one partner bind all the rest.

"Value received" is usually written in a note, and should be, but is not necessary. If not written, it is presumed by law, or may be supplied by proof.

The maker of an "accommodation" bill or note (one for which he has received no consideration, having lent his name on credit for the accommodation of the holder) is not bound to the person accommodated, but is bound to all other parties, precisely as if there was a good consideration.

No consideration is sufficient in law if it be illegal in its nature.

Checks or drafts must be presented for payment without unreasonable delay.

Checks or drafts should be presented during

business hours; but in this country, except in the case of banks, the time extends through the day and evening.

If the drawee of a check or draft has changed his residence, the holder must use due or reasonable diligence to find him.

If one who holds a check, as payee or otherwise, transfers it to another, he has a right to insist that the check be presented that day, or at farthest, on the following day.

A note indorsed in blank (the name of the indorser only written) is transferable by delivery, the same as if made payable to bearer.

If time of payment of a note is not named, it is payable on demand.

The time of payment of a note must not depend upon a contingency. The promise must be absolute.

A bill may be written upon any kind of paper, either with ink or pencil.

The payee should be named in the note, unless it is payable to bearer.

An indorsee has a right of action against all whose names were on the bill when he received it.

The holder of a note may give notice of protest either to all the previous indorsers or only to one of them; in case of the latter he must select the last indorser, and the last must give notice to the last before him, and so on. Each indorser must send notice the same day or the day following. Neither Sunday nor any legal holiday is counted in reckoning time in which notice is to be given.

The loss of a note is not sufficient excuse for not giving notice of protest.

If two or more persons, as partners, are jointly liable on a note or bill, due notice to one of them is sufficient.

If a note or bill is transferred as security, or even as payment of a pre-existing debt, the debt revives if the note or bill be dishonored.

An indorsement may be written on the face or back.

An indorser may prevent his own liability to



be sued by writing "without recourse," or similar words.

An oral agreement must be proved by evidence. A written agreement proves itself. The law prefers written to oral evidence, because of its precision.

No evidence can be introduced to contradict or vary a written contract; but it may be received in order to explain it, when such explanation is needed.

Written instruments are to be construed and interpreted by the law according to the simple, customary and natural meaning of the words used.

The finder of negotiable paper, as of all other property, must make reasonable efforts to find the owner before he is entitled to appropriate it for his own purposes. If the finder conceals it, he is liable to the charge of larceny or theft.

Joint payees of a bill or note, who are not partners, must all join in an indorsement.

One may make a note payable to his own order and indorse it in blank. He must write his name across its back or face, the same as any other indorser.

After the death of a holder of a bill or note, his executor or administrator may transfer it by his indorsement.

The husband who acquires a right to a bill or note which was given to the wife, either before or after marriage, may indorse it.

"Acceptance" applies to bills and not to notes. It is an engagement on the part of the person on whom the bill is drawn to pay it according to its tenor. The usual way is to write across the face of the bill the word "accepted."

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### High Cost of Courtesy

It is estimated that the little word "please" costs the people of the United States \$10,000,000 a year in telegraph tolls alone, owing to the increasing frequency with which this mark of courtesy is used in messages, at a cost of 3 cents or more each time it is employed.

## Governors' Salaries, Terms of Office and State Capitals

| Terms of Office. | States.             | Capitals.        | Yearly Salaries. |
|------------------|---------------------|------------------|------------------|
| One year....     | Massachusetts ..... | Boston .....     | \$10,000         |
| Two years...     | Rhode Island.....   | Newport .....    | 3,000            |
| Two years...     | Arkansas .....      | Little Rock....  | 5,000            |
| Two years...     | Colorado .....      | Denver .....     | 5,000            |
| Two years...     | Connecticut.....    | Hartford .....   | 5,000            |
| Two years...     | Georgia .....       | Atlanta .....    | 5,000            |
| Two years...     | Idaho .....         | Boise City....   | 5,000            |
| Two years...     | Iowa .....          | Des Moines....   | 5,000            |
| Two years...     | Kansas .....        | Topeka .....     | 5,000            |
| Two years...     | Maine .....         | Augusta .....    | 5,000            |
| Two years...     | Michigan .....      | Lansing .....    | 5,000            |
| Two years...     | Minnesota .....     | St. Paul .....   | 7,000            |
| Two years...     | Nebraska .....      | Lincoln .....    | 2,500            |
| Two years...     | New Hampshire....   | Concord .....    | 3,000            |
| Two years...     | New York.....       | Albany .....     | 10,000           |
| Two years...     | North Dakota.....   | Bismarck .....   | 5,000            |
| Two years...     | Ohio .....          | Columbus .....   | 10,000           |
| Two years...     | South Carolina..... | Columbia .....   | 5,000            |
| Two years...     | South Dakota.....   | Pierre .....     | 3,000            |
| Two years...     | Tennessee .....     | Nashville .....  | 4,000            |
| Two years...     | Texas .....         | Austin .....     | 4,000            |
| Two years...     | Vermont .....       | Montpelier ....  | 3,000            |
| Two years...     | Wisconsin .....     | Madison .....    | 5,000            |
| Three years.     | New Jersey.....     | Trenton .....    | 10,000           |
| Four years..     | Alabama .....       | Montgomery ..    | 7,500            |
| Four years..     | California .....    | Sacramento ...   | 10,000           |
| Four years..     | Delaware .....      | Dover .....      | 4,000            |
| Four years..     | Florida .....       | Tallahassee ...  | 6,000            |
| Four years..     | Illinois .....      | Springfield .... | 12,000           |
| Four years..     | Indiana .....       | Indianapolis ..  | 8,000            |
| Four years..     | Kentucky .....      | Frankfort .....  | 6,500            |
| Four years..     | Louisiana .....     | Baton Rouge...   | 7,500            |
| Four years..     | Maryland .....      | Annapolis .....  | 4,500            |
| Four years..     | Mississippi .....   | Jackson .....    | 5,000            |
| Four years..     | Missouri .....      | Jefferson City.. | 5,000            |
| Four years..     | Montana .....       | Helena .....     | 7,500            |
| Four years..     | Nevada .....        | Carson City....  | 7,500            |
| Four years..     | North Carolina .... | Raleigh .....    | 6,500            |
| Four years..     | Oregon .....        | Salem .....      | 5,000            |
| Four years..     | Pennsylvania .....  | Harrisburg ....  | 10,000           |
| Four years..     | Utah .....          | Salt Lake City.. | 6,500            |
| Four years..     | Virginia .....      | Richmond .....   | 5,000            |
| Four years..     | Washington .....    | Olympia .....    | 6,000            |
| Four years..     | West Virginia.....  | Charleston ....  | 5,000            |
| Four years..     | Wyoming .....       | Cheyenne .....   | 4,000            |

### How to Test Quality of Steel

Good tool steel, with a white heat, will fall to pieces; with bright red heat will crumble under the hammer; with middling heat may be drawn to a needle-point.

To test hardening qualities, draw under a low heat to a gradually tapered square point and plunge into cold water; if broken point will scratch glass, the quality is good.

To test tenacity, a hardened piece will be driven into cast-iron by a hardened hammer—if poor, will be crumbled. Excellence will be in proportion to tenacity in hard state. Soft steel of good quality gives a curved line fracture and uniform gray texture. Tool steel should be dull silver color, uniform, entirely free from sparkling qualities.

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### **Discount Your Bills**

Merchants in general should give this matter more serious consideration than they have done. It can be followed with profit by both large and small traders. Jobbers always favor cash buyers, will sell them on closer margins, give better bargains and terms. Bills taken up in advance, even if it be at the cost of unusual exertions, save money and anxiety, and the merchants will feel the beneficial effects in the freer swing given to business, quickened energies, and lighter heart resulting from forestalled obligations. This is a better way of using money in hand than that of putting capital into outside schemes, which merchants are often tempted into doing. No business thrives so well as the one which receives a man's undivided attention. A man with a keen, shrewd mercantile spirit is not necessarily equally keen in matters foreign to merchandising, and the larger part of those who go into Wall street or venture into speculation schemes in their anxiety to get rich fast, prove the most gullible of lambs in the hands of unscrupulous operators. And the worst feature of failure in these outside ventures is their bad effect upon legitimate merchandising. Let those merchants who have spare time and money turn them to the advantage of their own legitimate vocation. Make money by meeting bills in advance, thus clinching your credit and securing a margin for enlarged operations.

**How to Make 32 Kinds of Solder**

1. Plumber's solder—Lead 2 parts, tin 1 part.
2. Tinmen's solder—Lead 1 part, tin 1 part.
3. Zinc solder—Tin 1 part, lead 1 to 2 parts.
4. Pewter solder—Lead 1 part, bismuth 1 to 2 parts.
5. Spelter solder—Equal parts copper and zinc.
6. Pewterers' soft solder—Bismuth 2, lead 4, tin 3 parts.
7. Another—Bismuth 1, lead 1, tin 2 parts.
8. Another pewter solder—Tin 2 parts, lead 1 part.
9. Glazier's solder—Tin 3 parts, lead 1 part.
10. Solder for copper—Copper 10 parts, zinc 9 parts.
11. Yellow solder for brass or copper—Copper 32 lbs., zinc 29 lbs., tin 1 lb.
12. Brass solder—Copper 61.25 parts, zinc 38.75 parts.
13. Brass solder, yellow and easily fusible—Copper 45, zinc 55 parts.
14. Brass solder, white—Copper 57.41 parts, tin 14.60 parts, zinc 27.99 parts.
15. Another solder for copper—Tin 2 parts, lead 1 part. When the copper is thick heat it by a naked fire, if thin use a tinned copper tool. Use muriate or chloride of zinc as a flux. The same solder will do for iron, cast iron, or steel; if the pieces are thick, heat by a naked fire or immerse in the solder.
16. Black solder—Copper 2, zinc 3, tin 2 parts.
17. Another—Sheet brass 20 lbs., tin 6 lbs., zinc 1 lb.
18. Cold brazing without fire or lamp—Fluoric acid 1 oz., oxy-muriatic acid 1 oz., mix in a lead bottle. Put a chalk mark each side where you want to braze. This mixture will keep about 6 months in one bottle.
19. Cold soldering without fire or lamp—Bismuth  $\frac{1}{4}$  oz., quicksilver  $\frac{1}{4}$  oz., block tin filings 1 oz., spirits salt 1 oz., all mixed together.
20. To solder iron to steel or either to brass—Tin 3 parts, copper  $39\frac{1}{2}$  parts, zinc  $7\frac{1}{2}$  parts. When applied in a molten state it will firmly unite metals first named to each other.
21. Plumbers' solder—Bismuth 1, lead 5, tin 3 parts; is a first-class composition.
22. White solder for raised Britannia ware—Tin 100 lbs., hardening 8 lbs., antimony 8 lbs.
23. Hardening for Britannia (to be mixed separately from the other ingredients)—Copper 2 lbs., tin 1 lb.
24. Best soft solder for cast Britannia ware—Tin 8 lbs., lead 5 lbs.
25. Bis-



muth solder—Tin 1, lead 3, bismuth 3 parts. 26. Solder for brass that will stand hammering—Brass 78.26 parts, zinc 17.41 parts, silver 4.33 parts; add a little chloride of potassium to your borax for a flux. 27. Solder for steel joints—Silver 19 parts, copper 1 part, brass 2 parts. Melt all together. 28. Hard solder—Copper 2 parts, zinc 1 part. Melt together. 29. Solder for brass—Copper 3 parts, zinc 1 part, with borax. 30. Solder for copper—Brass 6 parts, zinc 1 part, tin 1 part; melt all together well and pour out to cool. 31. Solder for platina—Gold with borax. 32. Solder for iron—The best solder for iron is good tough brass with a little borax.

N. B.—In soldering, the surfaces to be joined are made perfectly clean and smooth, and then covered with sal ammoniac, resin or other flux; the solder is then applied, being melted on and smoothed over by a tin soldering iron. In soldering fluid, take 2 oz. muriatic acid, add zinc till bubbles cease, add  $\frac{1}{2}$  teaspoonful sal ammoniac.

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### What a Horse Can Do

A horse will travel 400 yards in  $4\frac{1}{2}$  minutes at a walk, 400 yards in 2 minutes at a trot, and 400 yards in 1 minute at a gallop. The usual work of a horse is taken at 22,500 lbs. raised 1 foot per minute, for 8 hours per day. A horse will carry 250 lbs. 25 miles per day of 8 hours. An average draught-horse will draw 1,600 lbs. 23 miles per day on a level road, weight of wagon included. The average weight of a horse is 1,000 lbs.; his strength is equal to that of five men. In a horse mill moving at 3 feet per second, track 25 feet diameter, he exerts with the machine the power of  $4\frac{1}{2}$  horses. The greatest amount a horse can pull in a horizontal line is 900 lbs.; but he can only do this momentarily; in continued exertion probably half of this is the limit. He attains his growth in 5 years, will live 25, average 16 years. A horse will live 25 days on water, without solid food, 17 days without eating or drinking, but only 5 days on solid food, without drinking.

### Some Famous Naval Battles

From the naval battle of Salamis to the great sea fight off Jutland is a "far cry," B. C. 480 to A. D. 1916, nearly 2,400 years. Salamis was the first great recorded battle of the world. Salamis drove the Persians from Greek soil; Jutland drove the German fleet back to cover, from which it emerged only to surrender after the signing of the armistice brought the Great War to a close. The loss of life at Salamis has been variously estimated at from 5,000 to 50,000; at the battle of Jutland or Skager-Rak the total casualties were 9,480. Triremes were at Salamis and shield and sword and brute numbers; at Jutland the hell of monster guns and deadly torpedoes, the scream of shell and the carnage of high explosives. Salamis was fought in the youth of nations; Jutland in the dawn of world democracy, the night of autocratic rule. One notable parallel to Jutland is found in the battle of the Nile, fought August 1, 1798—Lord Nelson and the English fleet against Admiral Brueys and the French fleet. Nine French line-of-battle ships were taken, two burned and two escaped. The French *L'Orient*, with Brueys and 1,000 men on board, blew up and only seventy or eighty escaped. Nelson's cry for this engagement was: "Victory or Westminster Abbey!" Other famous sea contests of the world are:

|                                                                                          |                |
|------------------------------------------------------------------------------------------|----------------|
| Winchelsea—English defeat 40 Spanish vessels and capture 36.....                         | Aug. 29, 1350  |
| Harfleur—English capture or destroy 500 French vessels .....                             | Aug. 15, 1416  |
| Gibraltar Bay—Dutch defeat the Spanish .....                                             | April 25, 1607 |
| Dover Strait—Dutch destroy the English fleet .....                                       | Nov. 29, 1652  |
| Portsmouth—English defeat the Dutch and destroy 11 men-of-war and 36 merchantmen .....   | Feb. 18, 1653  |
| North Foreland—100 English and Dutch men-of-war engaged; 11 Dutch taken and 6 sunk ..... | June 2, 1683   |

- Coast of Holland—English sink 30 Dutch men-of-war ..... July 31, 1653
- Thames—Dutch lose to English 24 men-of-war, 4 admirals killed and 4,000 seamen ..... July 25, 1660
- Messina—Spanish fleet, 29 vessels, destroyed by English ..... July 11, 1718
- Gibraltar—English defeated combined fleets of Spain and France..... Sept. 13, 1782
- Trafalgar—Nelson sunk 10 French and Spanish vessels after fighting, with 27 ships, 33 of the combined fleet; Nelson killed. Oct. 21, 1805
- Navarino—The fleets of England, France and Russia destroy 30 Turkish men-of-war ..... Oct. 20, 1827
- Strait of Korea—Japanese fleet annihilated Russian fleet ..... May 27-28, 1905
- North Sea, 50 miles west of Jutland—Greatest naval battle in history. Vessels engaged 81 heavy and many lighter craft. Vessels sunk, at least 25, including 4 battle cruisers, 1 battleship, 7 cruisers, and 13 destroyers. Both sides claimed victory but the Germans never offered battle again ..... May 31, 1916
- The most notable of American naval battles are the following :
- Coast of Scotland—Paul Jones captures the Serapis and Scarborough, 70 guns. Sept. 23, 1779
- Off St. Kitts—The Constellation, 26 guns, captures the French L'Insurgent, 40 guns ..... Feb. 9, 1799
- Coast of United States—Constitution, 44 guns, sinks the Guerrière, 38 guns, in 30 minutes ..... Aug. 19, 1812
- Madeira—United States, 44 guns, captures the Macedonian, 40 guns..... Oct. 25, 1812
- Brazil—Constitution captures the Java..... Dec. 29, 1812
- Demerara River—Hornet captures the Peacock ..... Feb. 24, 1813
- Lake Erie—Perry, with 54 guns, defeats English fleet with 63 guns..... Sept. 10, 1813
- Lake Champlain—McDonough, with 87 guns, defeats English fleet with 96 guns, Sept. 11, 1814

Manila Bay—Rear Admiral Dewey, with six ships: the Olympia (flagship), Boston, Baltimore, Petrel, Raleigh and Concord, destroyed Spain's Asiatic Squadron, 13 vessels, under Admiral Montejó: Isla de Cuba, Isla de Luzon, Castilla, Don Antonio de Ulloa, Don Juan de Austria, Reina Cristina, Callao, El Cano, El Correo, General Lezo, Hercules, Marques del Duero, Rapido; also the navy yard and nine batteries. American loss, eight wounded and about \$5,000 damage to ships. Spanish loss, about 1,200 killed or wounded and some \$6,000,-000 in vessels destroyed or captured. May 1, 1898

Santiago de Cuba—Cervera's squadron of six vessels: the Vizcaya, Almirante Oquendo, Maria Teresa, Cristobal Colon, Furor and Pluton, made a bold dash to escape from the harbor and was destroyed by Sampson's fleet: the Oregon, Iowa, Indiana, Texas, Brooklyn, Gloucester and Vixen. American loss: 1 killed, 2 wounded. Spanish loss: 360 killed, 165 wounded, 1,650 taken prisoners ..... July 3, 1898

### Playing Cards

The first pack of playing cards of which any copy is preserved was in use in Venice in 1125, and contained seventy-eight cards in all, twenty-two of which were picture cards of very quaint character. One picture card represented the devil, another death, a third the moon, a fourth the sun, while the fifth depicted the judgment day. The Venetians called it the game of tarots, and it was no doubt the original parent of the modern card pack, with its kings, queens, knaves, etc. The French developed the game greatly, and it became the standard pastime of all the royal courts of the sixteenth century. Cards became so prominent a feature of social life in France that when the revolution came new card packs were devised in which kings and queens were done away with, philosophers and popular heroes and heroines taking their places.



### The World's Seven Wonders

The seven wonders of the world are: The Pyramids, the Colossus of Rhodes, Diana's Temple at Ephesus, the Pharos of Alexandria, the Hanging Gardens at Babylon, the Statue of the Olympian Jove and the Mausoleum by Artemisia at Halicarnassus. The Pyramids are numerous, and space forbids anything like even a list of them. The great piles were constructed of blocks of red or syenitic granite, and of a hard calcareous stone. These blocks were of extraordinary dimensions and their transportation to the sites of the pyramids and their adjustment in their places, indicate a suprising degree of mechanical skill. The Great Pyramid covers an area of between twelve and thirteen acres. The masonry consisted originally of 89,028,000 cubic feet, and still amounts to about 82,111,000 feet. The present vertical height is 450 feet against 479 feet originally, and the present length of the sides is 746 feet against 764 feet originally. The total weight of the stone is estimated at 6,316,000,000 tons. The city of Rhodes was besieged by Demetrius Poliorcetes, King of Macedonia, but, aided by Ptolemy Soter, King of Egypt, the enemy were repulsed. To express their gratitude to their allies and to their tutelary deity, they erected a brazen statue to Apollo. It was 105 feet high and hollow, with a winding staircase that ascended to the head. After standing fifty-six years, it was overthrown by an earthquake, 224 years before Christ, and lay nine centuries on the ground, and then was sold to a Jew by the Saracens, who had captured Rhodes, about the middle of the seventh century. It is said to have required nine hundred camels to remove the metal, and from this statement it has been calculated its weight was 720,000 pounds. The Temple of Diana, at Ephesus, was built at the common charge of all the Asiatic States. The chief architect was Chersiphon, and Pliny says that 220 years were employed in completing the temple, whose riches were immense. It was 425 feet long, 225 broad, and was supported by 125 col-

umns of Parian marble (sixty feet high, each weighing 150 tons), furnished by as many kings. It was set on fire on the night of Alexander's birth by an obscure person named Erostratus, who confessed on the rack that the sole motive which prompted him was the desire to transmit his name to future ages. The temple was again built, and once more burned by the Goths in their naval invasion, A. D. 256. The colossal statue of Jupiter in the temple of Olympia, at Elis, was by Phidias. It was in gold and ivory, and sat enthroned in the temple for 800 years, and was finally destroyed by fire about A. D. 475. From the best information it is believed that the Mausoleum at Halicarnassus was a rectangular building surrounded by an Ionic portico of thirty-six columns, and surmounted by a pyramid, rising in twenty-four steps, upon the summit of which was a colossal marble quadriga with a statue of Mausolus. The magnificent structure was erected by Artemisia, who was the sister, wife, and successor of Mausolus.

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### **The Oldest Architectural Work Known to Exist**

It is the remarkable rock-cut temples at Ipsambul or Abousambul, in Nubia, on the left bank of the Nile. The largest temple contains fourteen apartments hewn out of the solid rock. The first and largest of these is 57 feet long and 52 feet broad and is supported by two rows of massive square pillars, four in each row, and 30 feet high. To each of these pillars is attached a standing colossus, or human figure, of enormous proportions, reaching to the roof, overlaid with a kind of stucco and painted with gaudy colors, apparently as brilliant now, after the lapse of over 4,000 years, as when first laid on. In front of this temple are seated four still larger human figures, two of them being 65 feet in height—presumed to represent Rameses the Great, more frequently termed Sesostris, whose marvelous military exploits are depicted in drawings and painting on the temple walls.

### Castle Garden—New York City

Castle Garden is a historic spot. It was originally a fort, and afterward was transformed into a summer garden, and in that way derived the name it now bears. About a century ago it was used for civic and military displays and receptions. In 1824 Lafayette revisited America, and a grand ball was given in his honor at Castle Garden, and President Jackson, in 1832, and President Tyler, in 1843, were publicly received there. Later it became a concert hall, and there Jenny Lind made her first appearance in this country. In 1855 the immigrant depot was established within its walls. In 1891 the immigrant station was removed, and Castle Garden was converted into an aquarium.

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### Varnish Formulas Worth Preserving

**VARNISHING ARTICLES OF IRON OR STEEL.**—The following varnish will maintain its transparency and the metallic brilliancy of the articles will not be obscured: Dissolve ten parts of clear grains of mastic, five parts of camphor, five parts of sandarach and five parts of elemi in a sufficient quantity of alcohol, and apply without heat.

**MORDANT VARNISHES.**—One of the simplest of these varnishes, which are chiefly used when a coating of some other substance, such as gold leaf, is to be entirely or in part laid over them, is that procured by dissolving a little honey in thick glue. It has the effect of greatly heightening the color of the gold.

**A BRILLIANT BLACK VARNISH** for cooking and gasoline stoves: Asphaltum, two pounds; boiled linseed oil, one pint; oil of turpentine, two quarts. Fuse the asphaltum in an iron pot, boil the linseed oil, and add while hot; stir well and remove from the fire. When partially cooled add the oil of turpentine. Some makers add driers.

**VARNISH FOR COATING METALS.**—One part of copal, one part of oil of rosemary, in two or three parts of absolute alcohol, supplies a clear varnish as limpid as water. It should be applied hot. When dry it will prove hard and durable.

**Finest Harbors on the Globe**

San Francisco may fairly claim to have the most capacious natural harbor of any of the world's greatest trading marts. It is also one of the very safest. It is entered through the Golden Gate, a passage a mile wide and thirty-five feet deep at low tide—admitting the largest ships afloat without danger of grounding. The landlocked bay of which this harbor is part is fifty miles long and averages five miles in width. There all the shipping of the entire globe could anchor in perfect safety. Port Philip Bay, the chief harbor of Victoria, Australia, is larger than the bay of San Francisco, being about thirty-eight miles long by thirty-three broad, but its very breadth, with its surroundings, leaves it exposed to storms from certain quarters. Port Jackson, on which Sydney, New South Wales, Australia, is located, is a magnificent harbor, completely landlocked, extending inland in some places fully twenty miles, and having ample depth of water for vessels of the heaviest burden. The harbors of New York City, Rio Janeiro, Brazil, and Havana, Cuba, are capacious and secure. Next come those of Boston, Norfolk, Va., Portland, Me., Halifax, N. S., Copenhagen, Constantinople, Hong Kong, Yokohama, and Nagasaki. The great ports situated on the banks of rivers, such as London, Liverpool, Glasgow, Lisbon, Philadelphia, New Orleans, Quebec, Shanghai, Canton, Calcutta, etc., are not included in the definition of harbors as here considered.

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**How the Price of Confederate Money Dropped**

When the first issue of the Confederate money was scattered among the people, it commanded a slight premium. It then scaled down as follows: June, 1861, 90c; December 1, 1861, 80c; December 15, 1861, 75c.; February 1, 1862, 60c.; February 1, 1863, 20c.; June, 1863, 8c.; January, 1864, 2c.; November, 1864, 4½c.; January, 1865, 2½c.; April 1, 1865, 1½c. After that date it took from \$800 to \$1,000 in Confederate money to buy a one-dollar greenback.



### Historical Frosts

The Mediterranean was frozen over, and the merchants passed with their merchandise in carts, in 1234; the Cattegat, or sea between Norway and Denmark, was frozen, and from Oxslo, in Norway, they traveled on the ice to Jutland, in 1294; the sea between Norway and the promontory of Scagernit frozen over, and from Sweden to Gothland, 1296; the Baltic was covered with ice fourteen weeks, between the Danish and Swedish Islands, in 1306; the Baltic was passable for foot passengers and horsemen for six weeks, in 1323; the sea was frozen over and passable from Stralsund to Denmark, in 1349; the Baltic was quite frozen over, from Pomerania to Denmark, in 1402; the whole sea between Gothland and Geland was frozen, and from Restock to Gezoer, in 1408; the ice bore riding on from Lubec to Prussia, and the Baltic was covered with ice from Mecklenburg to Denmark, in 1423, 1426, and 1459. The sea between Constantinople and Iskodar was passable on ice, 1620; in 1785, which lasted one hundred and fifteen days; in 1788, which lasted only from November to January; 1789, when the Thames was crossed opposite the custom-house, the Tower, Execution Dock, Putney, Brentford, etc. It was general through Europe, particularly in Holland, at the same time; the most severe, on December 25, 1796, that had been felt in the memory of man. The winter of 1780 was very cold in New York. The Bay was frozen over, and wagons and artillery crossed to Staten Island. Again in the winter of 1821 the Bay was frozen over.

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### Damages by Lightning

A flash of lightning penetrated the theater at Venice during a representation; 600 people were in the house, several of whom were killed; it put out the candles, melted a lady's gold watch-case, the jewels in the ears of others, which were compositions, and split several diamonds, August, 1769.

### Earthquakes and Other Great Catastrophes

In China, where some of the greatest rivers in the world flow between artificial banks at an elevation considerably above the surrounding country, there have been overflows that caused the destruction of hundreds of thousands of lives. There have been similar disasters in India, where, as in China, the rivers had made beds for themselves with alluvial banks higher than the plains across which they flowed. But aside from these the colossal calamity at Johnstown, Pa., in June, 1889, and through the fated Conemaugh valley, and the even greater Galveston flood in 1900, lead all disasters in this country in the appalling muster roll of the dead. The list of losses by great floods and freshets in history is as follows:

| Year. | Place.                   | Lives Lost |
|-------|--------------------------|------------|
| 1871— | China .....              | 3,000      |
| 1874— | Mill River, Mass.....    | 150        |
| 1878— | Egypt, the Nile.....     | 250        |
| 1887— | Yellow River, China..... | 100,000    |
| 1889— | Johnstown, Pa. ....      | 6,111      |
| 1900— | Galveston, Texas .....   | 10,000     |

In past centuries the greatest loss of life has been by earthquake and the following list embraces the loss in historic calamities. One instance shows how the human race has been depleted from this cause. In the Kingdom of Naples, from 1783 to 1857, a period of 75 years, the loss of life by earthquakes was 111,000 or at the rate of more than 1,500 a year, out of a population of 6,000,000. The country surrounding the Mediterranean and the inter-tropical area from which the American Cordilleras spring, may be regarded as the centers of earthquake activity, though some of the greatest earthquakes of all time have occurred in Eastern Asia and the East Indies.

A. D. 17—Pompeii and Herculaneum; accompaniment of eruption of Vesuvius.

742—Syria, Palestine and Asia; 500 towns destroyed.

1531—Lisbon; 1,500 houses and 30,000 persons destroyed.

- 1692—Jamaica; Port Royal destroyed; 3,000 lives lost.
- 1693—Sicily; 54 towns and 300 villages affected; more than 100,000 lives lost.
- 1703—Aquila, Italy; 5,000 killed.
- 1703—Jeddo, Japan; 200,000 lives lost.
- 1716—Algiers; 20,000 deaths.
- 1726—Palermo, Italy; 6,000 lives lost.
- 1731—Peking; estimated loss of life, 100,000 persons.
- 1746—Peru; 18,000 deaths.
- 1754—Cairo; 400,000 lives lost.
- 1755—Lisbon and Portugal generally; 50,000 died in Lisbon alone; this earthquake extended 500 miles, and was felt even in Scotland.
- 1759—Syria, over a large area; 20,000 lives lost.
- 1773—Guatemala; 33,000 perished.
- 1780—Mauritius; 75,000 lives lost.
- 1783—Messina; 60,000 lives lost.
- 1797—Quito; 41,000 lives lost.
- 1812—Caraccas; 12,000 lives lost.
- 1822—Aleppo; 22,000 lives lost.
- 1829—Murcia, Spain; 6,000 killed.
- 1830—Canton, China; loss, 6,000 lives.
- 1842—San Domingo; between 4,000 and 5,000 lives lost.
- 1857—Calabria; 10,000 lives lost.
- Lacaita estimates the loss of life in the Kingdom of Naples from earthquakes between 1783 and 1857 at 111,000, out of an average population of 6,000,000.
- 1859—Erzeroum; 15,000 killed. Quito; 5,000 lives lost.
- 1861—Mendoza, S. America; 7,000 killed.
- 1863—Manila; 10,000 killed.
- 1868—Peru and Ecuador; 25,000 killed, 30,000 homeless; loss of property, \$300,000,000.
- 1875—Colombia; 14,000 lives lost.
- 1881—Scio; 4,000 killed.
- 1885—Cashmere; more than 3,000 deaths; 70,000 buildings destroyed.
- 1887—Several shocks in Southern France and the United States.

1888—Yunnan, China; 4,000 killed.

1906—San Francisco, Cal.; almost destroyed.

1907—A large part of Kingston, Jamaica, destroyed.

1908—Nearly 200,000 people killed in Italy and Sicily, the cities of Messina, Catania, Paterno and Regio being completely destroyed.

Recent earthquakes follow, with lives lost:

|                                          |        |
|------------------------------------------|--------|
| 1906—San Francisco (earthquake and fire) | 452    |
| 1906—Valparaiso .....                    | 1,500  |
| 1907—Jamaica .....                       | 1,100  |
| 1908—Sicily and Calabria.....            | 76,483 |
| 1910—Costa Rica .....                    | 1,500  |
| 1912—Turkey .....                        | 3,000  |
| 1915—Italy .....                         | 29,978 |
| 1917—Guatemala .....                     | 2,500  |
| 1920—Mexico; many villages destroyed.... | 2,500  |

### Famines

Famine which lasted seven years, 1708 before Christ; at Rome, when many people threw themselves into the Tiber, 440 before Christ; in Britain, so that the inhabitants ate the barks of trees, 272 after Christ; one in Scotland, where thousands were starved, 306; in England and Wales, where 40,000 were starved, 310; all over Britain, 325; at Constantinople, 446; in Italy, where parents ate their children, 450; in Scotland, 576; all over England, Wales, and Scotland, 739; another in Wales, 747; in Wales and Scotland, 792; again in Scotland, 803; again in Scotland, when thousands were starved, 823; a severe one in Wales, 836; in Scotland, which lasted four years, 954; famines in England, 864, 974, 976, 1005; in Scotland, which lasted two years, 1047; in England 1050 and 1087; in England and France, from 1193 to 1195; in England, 1251, 1315, 1318, 1335, 1348; in England and France, called the dear summer, 1353; in England, 1389 and 1438, so great that bread was made of fern roots; in 1565, two millions were expended on the importation of corn; one in 1748; another in 1798.



## **Divorce Laws of Every State and Territory**

Six months previous residence required in Idaho, Nebraska, Nevada, South Dakota and Texas; one year in Arizona, Arkansas, California, Colorado, Georgia, Illinois, Iowa, Kansas, Kentucky, Maine, Minnesota, Missouri, Montana, New Mexico, North Dakota, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming; one to two years in Michigan and Mississippi; two years in Florida, Indiana, Maryland, North Carolina and Tennessee; one to three years in Alabama; two to three years in New Jersey; three years in Connecticut; three to five years in Massachusetts; actual residence in Delaware and New Hampshire.

**Causes for Divorce:** The violation of the marriage vow is cause for absolute divorce in all the States and Territories excepting South Carolina, which has no divorce laws.

Physical inability is a cause in all the States except California, Connecticut, Dakotas, Idaho, Iowa, Louisiana, New Mexico, New York, South Carolina, Texas and Vermont. In most of these states it renders marriage voidable.

Willful desertion, six months, in Arizona.

Willful desertion, one year, in Arkansas, California, Colorado, Dakotas, Florida, Idaho, Kansas, Kentucky, Missouri, Montana, Nevada, Oregon, Utah, Wisconsin, Washington and Wyoming.

Willful desertion, two years, in Alabama, District of Columbia, Illinois, Indiana, Iowa, Michigan, Mississippi, Nebraska, Pennsylvania and Tennessee.

Willful desertion, three years, in Connecticut, Delaware, Georgia, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, Ohio, Texas, Vermont and West Virginia.

Willful desertion, five years, in Virginia and Rhode Island, though the court may in the latter State decree a divorce for a shorter period.

Habitual drunkenness in all the States and Ter-

ritories except Maryland, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Texas, Vermont, Virginia and West Virginia.

"Imprisonment for felony" or "conviction of felony" in all the States and Territories (with limitations) except Florida, Maine, Maryland, New Jersey, New Mexico, New York and South Carolina.

"Cruel and abusive treatment," "intolerable cruelty," "extreme cruelty," "repeated cruelty," or "inhuman treatment," in all the States and Territories except New Jersey, New York, North Carolina, South Carolina, Virginia and West Virginia.

Failure by the husband to provide: Six months in Arizona; one year in California, Colorado, Dakotas, Nevada and Wyoming; two years in Indiana and Idaho; no time specified in Massachusetts, Michigan, Maine, Nebraska, New Mexico, Rhode Island, Vermont, and Wisconsin; willful neglect for three years in Delaware.

Fraud and fraudulent contract in Arizona, Connecticut, Georgia, Idaho, Kansas, Kentucky, Ohio, Pennsylvania and Washington.

Absence without being heard from: Three years in New Hampshire; seven years in Connecticut and Vermont; separation, five years, in Kentucky; voluntary separation, five years, in Wisconsin and Kentucky. When reasonably presumed dead by the court, in Rhode Island.

"Ungovernable temper," in Kentucky; "habitual indulgence in violent and ungovernable temper," in Florida; "cruel treatment, outrages or excesses as to render their living together insupportable," in Arkansas, Kentucky, Louisiana, Missouri, Tennessee and Texas; "indignities as render life burdensome," in Missouri, Oregon, Pennsylvania, Tennessee, Washington and Wyoming. Attempt to murder the other party, in Illinois and Tennessee.

Other causes in different States are as follows: "Husband notoriously immoral before marriage, unknown to wife," in West Virginia; "fugitive from justice," in Virginia; "gross misbehavior or

wickedness," in Rhode Island; "any gross neglect of duty," in Kansas and Ohio; "attempt on life," in Illinois; "refusal of wife to remove into the State," in Tennessee; "mental incapacity at time of marriage," in Georgia; "three years with any religious society that believes the marriage relation unlawful," in Massachusetts; "joining any religious sect that believes marriage unlawful, and refusing to cohabit six months," in New Hampshire; "parties cannot live in peace and union," in Utah; "settled aversion, which tends to permanently destroy all peace and happiness," in Kentucky; "insanity for five years," in Wisconsin, and for ten years in Washington; "vagraney of the husband," in Missouri and Wyoming.

In Georgia an absolute divorce is granted only after the concurrent verdict of two juries, at different terms of the court. In New York absolute divorce is granted for but one cause, adultery. In South Carolina there are no divorce laws.

The granting of divorce for any cause is left to the discretion of the court in Washington. The discretion of the court is also practically allowed by law in Wisconsin.

All of the causes above enumerated are for absolute or full divorce, and collusion and connivance are especially barred, and also condonation of violation of the marriage vow.

Remarriage. There are no restrictions upon remarriage by divorced persons in Arizona, Connecticut, Kentucky, and Minnesota. Either party may remarry, but defendant must wait two years and obtain permission from the court in Massachusetts. The decree of the court may restrain the guilty party from remarrying in Virginia. Parties cannot remarry, except by permission of the court, in Maine. In the State of New York the plaintiff may remarry, but the defendant cannot do so during the plaintiff's lifetime, unless the decree be modified or proof that five years have elapsed and that complainant has married again and defendant's conduct has been uniformly good. Any violation of this is punished

as bigamy, even though the other party has been married. In Delaware, Pennsylvania, and Tennessee, no wife or husband divorced for violation of the marriage vow can marry the *particeps criminis* during the life of the former husband or wife, nor in Louisiana at any time; such marriage in Louisiana renders the person divorced guilty of bigamy.

The courts of every State, and particularly of New York, are very jealous of their jurisdiction, and generally refuse to recognize as valid a divorce against one of the citizens of the State by the court of another State, unless both parties to the suit were subject at the time to the jurisdiction of the court granting the divorce.

Kansas courts grant divorces for the reason that the applicant's husband or wife has obtained a divorce in another State, and the applicant has been forbidden to remarry. If a wife in New York obtains a divorce from her husband, and he is forbidden to remarry, he may go to Kansas and obtain a divorce on that ground. If his wife contests the case, or can be served with the papers in Kansas, so that she is brought under the jurisdiction of the Kansas court, the courts of New York must recognize the divorce as valid, and cannot punish the husband for remarrying in New York.

New York permits polygamy and polyandry in certain cases. Desertion for five years, without knowledge that the deserter is living, permits the one deserted to marry again; and the second marriage is valid, though the deserter returns. The second marriage may be declared void, but only from the date of the decree, by a court of competent jurisdiction, upon proper petition; but if no such petition is made, and all parties are satisfied, one husband may live in lawful wedlock with two or more wives, or one wife with two or more husbands. The children will inherit and both wives will be entitled to dower.



## The Search for the North Pole and the Farthest Points Reached

| Year. | Explorer              | Latitude reached. | Miles from the pole. |
|-------|-----------------------|-------------------|----------------------|
| 1587— | John Davis.....       | 72 :12            | 1,235                |
| 1594— | William Barents.....  | 77 :29            | 879                  |
| 1596— | Rup Heemskerck.....   | 79 :49            | 706                  |
| 1607— | Heinrick Hudson.....  | 80 :23            | 667                  |
| 1616— | William Baffin.....   | 77 :45            | 908                  |
| 1806— | William Scoresby..... | 81 :30            | 587                  |
| 1827— | W. E. Parry.....      | 82 :45            | 503                  |
| 1854— | E. K. Kane.....       | 80 :10            | 682                  |
| 1868— | Nordenskjold .....    | 81 :42            | 573                  |
| 1870— | C. F. Hall.....       | 82 :11            | 542                  |
| 1874— | Julius Payer.....     | 82 :05            | 549                  |
| 1876— | G. S. Nares.....      | 83 :20            | 463                  |
| 1882— | A. W. Greely.....     | 83 :24            | 458                  |
| 1896— | Frithjof Nansen.....  | 86 :14            | 261                  |
| 1899— | Walter Wellman.....   | 82 :00            | 555                  |
| 1900— | Duke de Abruzzi.....  | 86 :34            | 238                  |
| 1902— | Robert E. Peary.....  | 84 :17            | 397                  |
| 1906— | Robert E. Peary.....  | 87 :06            | 201                  |
| 1909— | Robert E. Peary.....  | Reached the Pole. |                      |

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### The Blarney Stone

Blarney is a village in Ireland, in the County of Cork, about five miles from the far-famed city of that name. It is chiefly celebrated as giving the name to a peculiar kind of eloquence which is said to be characteristic of the light-hearted natives of the Emerald Isle. The old castle of Blarney contains the identical stone, the kissing of which is believed to give the person peculiar skill in speech. It is one of those superstitions which can be traced back until the mind of man runneth not to the contrary.

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### How Grain Will Shrink

Farmers rarely gain by keeping their grain after it is fit for market, when the shrinkage is taken into account. Wheat, from the time it is threshed, will shrink two quarts to the bushel or six per cent, in six months, in the most favorable conditions.

### To Find the Required Diameter of Wheels

A wheel 84 inches in diameter and making 54 revolutions per minute is to give motion to a shaft at the rate of 100 revolutions in the same time; to find the diameter of a wheel suitable for that purpose, proceed thus:

Multiply 84, diameter of wheel, by 54, number of revolutions per minute.

Therefore,  $84 \times 54 = 4536$ .

Again,  $4536 \div 100$ , proposed number of revolutions, we have 45.36 inches.

### How to Calculate the Necessary Power Required to Move a Given Weight on a Level Railroad

If a train of 40 tons' weight is drawn on a level railroad, what power is necessary to overcome the resistance, it being 8 pounds per ton?

2000 pounds (number of pounds in a ton):

Then,  $2000 \div 8 = 250$ ; that is, it will overcome .004 of the weight.

Again,  $30 \times 2000 \div 250 = 240$  pounds.

What power would be required to move a load of 100 tons up a grade, supposing the grade to be 2 feet in every 100, the co-efficient of friction being .004?

$$2 \times 250 \text{ lbs.} + 100 \times 100 \times 2000$$

$$\text{Then, } \frac{\quad}{100 \times 250} = 4800 \text{ lbs.}$$

To compute the power, speed or time of running a locomotive or train upon a railway, proceed thus: Multiply the weight of the train by the rate per hour and this by 1.28 and the product is the necessary horsepower.

Example: What is the required power of a locomotive to draw a train of 45 tons at the rate of 50 miles per hour.

$$1.28 \times 45 \times 50 \quad 2880$$

$$\frac{\quad}{60} = \frac{\quad}{60} = 48 \text{ horsepower.}$$

In what time will a locomotive of 50 horsepower, drawing a train of 135 tons, run a distance of 80 miles? Proceed thus:

$$\frac{1.28 \times 135 \times 80}{50} = \frac{13824}{50} = 276.24 \text{ minutes.}$$


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### **Velocity of Wheels, Pulleys, Drums, Etc.**

When wheels are applied to communicate motion from one part of a machine to another, their teeth act alternately on each other; consequently, if one wheel contains 60 teeth and another 20 teeth, the one containing 20 teeth will make three revolutions while the other makes but one; and if drums or pulleys are taken in place of wheels, the effect will be the same, because their circumferences, describing equal spaces, render their revolution unequal; from this the rule is derived, namely: Multiply the velocity of the driver by the number of teeth it contains and divide by the velocity of the driven; the quotient will be the number of teeth it ought to contain; or, multiply the velocity of the driver by its diameter, and divide by the velocity of the driven.

Example: If a wheel that contains 75 teeth makes 16 revolutions per minute, required the number of teeth in another to work into and make 24 revolutions in the same time, then  $16 \times 75 \div 24 = 50$  teeth.

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### **How to Polish Sea-Shells**

The surface of the shell should be first cleansed by rubbing it with a rag dipped in hydrochloric acid until the outer dull covering of the shell is removed. It must then be washed in warm water, dried in hot sawdust, and polished with chamois leather. Those shells which are destitute of a natural polished surface may be either varnished or rubbed with a mixture of tripoli powder and turpentine applied by means of a piece of wash-leather, after which fine tripoli should be used, then a little olive oil rubbed in well, and finally the surface well rubbed with the chamois leather. The hands should be protected from contact with the acid.

**How to Mix Inks or Paints for Tints**

A larger quantity of the first-named color must always be used.

Dark green and purple make bottle green.

White and medium yellow make buff tint.

Red, black, and blue make dark brown.

Bronze blue, lemon yellow, and black make dark green.

White, medium yellow, and black make drab tint.

White, lake, and lemon yellow make flesh tint.

Lemon yellow and bronze blue make grass green.

White and black make gray tint.

White and purple make lavender tint.

Red, black, and medium yellow make maroon.

Lake and purple make magenta.

Medium yellow and purple make olive green.

Medium yellow and red make orange.

White, ultramarine blue, and black make pearl tint.

White and lake make pink.

Ultramarine blue and lake make purple.

Orange, lake, and purple make russet.

Medium yellow, red, and white make sienna.

White and ultramarine blue make sky blue.

Ultramarine blue, black, and white make slate.

Vermilion and black make Turkey red.

White, yellow, red, and black make umber.

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**St. Peter's and Cologne Cathedrals**

The dimensions of St. Peter's at Rome, the largest cathedral in the world, are as follows: Length of the interior, 613½ English feet; of transept, 446½ feet; height of nave, 152½ feet; and the diameter of cupola, 193 feet. The height of the dome from the pavement to the top of the cross is 448 feet. Cologne cathedral is 511 feet long, and 231 feet broad. The towers are 511 feet high. This famous building founded by Archbishop Conrad, designed by Architect Gerhard Von Riehl, and commenced Aug. 15, 1248, was not completed until Aug. 14, 1880.



## The Highest Mountains

|                      | Feet   |                       | Feet   |
|----------------------|--------|-----------------------|--------|
| Mt. Everest,         |        | Mt. Rainier, Wash.    | 14,526 |
| Himalayas .....      | 29,002 | Mt. Shasta, Cal....   | 14,450 |
| Goodwin-Austen,      |        | Mt. Elbert, Colo....  | 14,421 |
| Himalayas .....      | 28,280 | Pike's Peak, Colo.... | 14,320 |
| Kunchinginga, Asia.  | 28,156 | Mt. Ophir, Sumatra.   | 13,800 |
| Dhawalagiri, Asia..  | 26,826 | Fremont's Peak,       |        |
| Gusherbrum, Asia..   | 26,378 | Wyoming .....         | 13,570 |
| Nanda Devi, Asia...  | 25,600 | Long's Peak, Cal....  | 13,400 |
| Kutha Kangir, Asia.  | 24,740 | Mt. Ararat, Armenia.  | 12,700 |
| Mustaghata, Asia...  | 24,400 | Peak of Teneriffe,    |        |
| Chumalari, Asia....  | 23,946 | Canaries .....        | 12,236 |
| Anconhuma, S. A....  | 21,490 | Miltsin, Morocco....  | 12,000 |
| Mercedario, S. A.... | 22,315 | Mt. Hood, Oregon..    | 11,934 |
| Huascaran, S. Amer.  | 22,188 | Simplon, Alps.....    | 11,542 |
| Anconhuma, S. A....  | 21,400 | Mt. Lebanon, Syria..  | 11,000 |
| Illampu, So. Amer.   | 21,192 | Mt. Perdu, France..   | 10,950 |
| Huandoy, So. Amer.   | 20,847 | Mt. St. Helen's, Ore. | 10,158 |
| Illimani, So. Amer.  | 21,030 | Mt. Etna, Sicily....  | 10,874 |
| Pamiri, So. Amer.... | 20,735 | Olympus, Greece...    | 9,754  |
| Chimborazo, S. A.... | 20,498 | St. Gothard, Alps...  | 9,080  |
| Mt. McKinley,        |        | Pilate, Alps.....     | 9,050  |
| Alaska .....         | 20,300 | Mt. Sinai, Arabia...  | 8,000  |
| Tupungato, S. A....  | 20,286 | Pindus, Greece.....   | 7,677  |
| Haina, So. Amer....  | 20,171 | Black Mountain,       |        |
| San Jose, So. Amer.  | 20,020 | North Carolina...     | 6,711  |
| Cotopaxi, Ecuador..  | 19,408 | Mt. Washington,       |        |
| Antisana, Ecuador..  | 19,150 | New Hampshire..       | 6,234  |
| Orizaba, Mexico....  | 18,318 | Mt. Marcy, N. Y....   | 5,467  |
| St. Elias, Alaska... | 17,850 | Mt. Hecla, Iceland..  | 5,000  |
| Popocatepetl, Mex..  | 17,735 | Ben Nevis, Scotland   | 4,400  |
| Ruwenzori, Africa..  | 16,744 | Mansfield, Vermont.   | 4,280  |
| Mt. Roa, Hawaii....  | 16,000 | Peaks of Otter, Vir.  | 4,260  |
| Mt. Brown.....       | 15,900 | Ben Lawers, Scotl'd   | 4,030  |
| Mont Blanc.....      | 15,776 | Parnassus, Greece..   | 3,950  |
| Mowna Roas,          |        | Vesuvius, Naples...   | 3,932  |
| Owhyhee .....        | 15,700 | Snowdon, England..    | 3,500  |
| Mt. Rosa, Alps,      |        | Stromboli .....       | 3,850  |
| Sardinia .....       | 15,217 | Ben Lomond.....       | 3,280  |
| Pinchinca, Ecuador.  | 15,200 | Mount Carmel.....     | 2,000  |
| Mt. Whitney, Cal...  | 15,000 | Gibraltar .....       | 1,470  |
| Mt. Fairweather,     |        |                       |        |
| Alaska .....         | 14,796 |                       |        |

## Time in Which Money Doubles

| Per Cent.       | Simple Interest | Compound Interest. | Per Cent.        | Simple Interest | Compound Interest. |
|-----------------|-----------------|--------------------|------------------|-----------------|--------------------|
| 2...50 y*       |                 | 35 y.              | 4½.22 y. 81 d.   |                 | 15 y. 273 d.       |
| 2½.40 y.        |                 | 28 y. 26 d.        | 5...20 y.        |                 | 14 y. 75 d.        |
| 3...33 y. 4 m.  |                 | 23 y. 164 d.       | 6...16 y. 8 m.   |                 | 11 y. 327 d.       |
| 3½.28 y. 208 d. |                 | 20 y. 54 d.        | 7...14 y. 104 d. |                 | 10 y. 89 d.        |
| 4...25 y.       |                 | 17 y. 246 d.       | 10...10 y.       |                 | 7 y. 100 d.        |

\*y, year; m, month; d, day.

### Comparative Yield of Various Grains, Vegetables and Fruits

| Lbs. per acre. |       | Lbs. per acre.    |        |
|----------------|-------|-------------------|--------|
| Hops .....     | 442   | Grass .....       | 7,000  |
| Wheat .....    | 1,260 | Carrots .....     | 6,800  |
| Barley .....   | 1,600 | Potatoes .....    | 7,500  |
| Oats .....     | 1,840 | Apples .....      | 8,000  |
| Peas .....     | 1,920 | Turnips .....     | 8,420  |
| Beans .....    | 2,000 | Cinquefoil grass. | 9,600  |
| Plums .....    | 2,000 | Vetches, green..  | 9,800  |
| Cherries ..... | 2,000 | Cabbage .....     | 10,900 |
| Onions .....   | 2,800 | Parsnips .....    | 11,200 |
| Hay .....      | 4,000 | Mangel Wurzel..   | 22,000 |
| Pears .....    | 5,000 |                   |        |

### Character by the Month

Here is an old astrological prediction, said to indicate, with tolerable certainty, the character of the girl according to the month she happens to be born in:

If a girl is born in January, she will be a prudent housewife, given to melancholy, but good-tempered.

If in February, a humane and affectionate wife and tender mother.

If in March, a frivolous chatter-box, somewhat given to quarreling.

If in April, inconstant, not intelligent, but likely to be good-looking.

If in May, handsome and likely to be happy.

If in June, impetuous, will marry early and be frivolous.

If in July, passably handsome, but with a sulky temper.

If in August, amiable and practical, and likely to marry rich.

If in September, discreet, affable, and much liked.

If in October, pretty and coquettish, and likely to be unhappy.

If in November, liberal, kind, of a mild disposition.

If in December, well proportioned, fond of novelty, and extravagant.

### Seasoning and Preserving Timber

For the purpose of seasoning, timber should be piled under shelter, where it may be kept dry, but not exposed to a strong current of air. At the same time there should be a free circulation of air about the timber, with which view slats or blocks of wood should be placed between the pieces that lie over each other, near enough to prevent the timber from bending.

In the sheds the pieces of timber should be piled in this way, or in square piles, and classed according to age and kind. Each pile should be distinctly marked with the number and kind of pieces, and the age or the date of receiving them.

The piles should be taken down and made over again at intervals, varying with the length of time which the timber has been cut.

The seasoning of timber requires from two to four years, according to its size.

Gradual drying and seasoning in this manner is considered the most favorable to the durability and strength of timber, but various methods have been prepared for hastening the process. For this purpose, steaming and boiling timber has been applied with success; kiln-drying is serviceable only for boards and pieces of small dimensions, and is apt to cause cracks, and to impair the strength of wood, unless performed very slowly.

Timber of large dimension is improved by immersion in water for some weeks, according to its size, after which, it is less subject to warp and crack in steaming.

Oak timber loses about one-fifth of its weight in seasoning, and about one-third in drying.

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### How Van Buskirk Sozodont Is Made

Castile soap,  $1\frac{1}{4}$  drams; glycerine,  $1\frac{1}{4}$  drams; alcohol, 1 ounce; soft water, 4 ounces; oil of wintergreen, oil of cinnamon, oil of anise (either), sufficient to flavor. Mix. Accompanying this is a powder which is composed of equal parts of chalk (prepared), orris root, and carbonate of magnesia.

### **How to Preserve Meat**

Meat of any kind may be preserved in a temperature of from 80 to 100 degrees for a period of ten days after it has been soaked in a solution of 1 pint of salt dissolved in 4 gallons of cold water and one-half gallon of a solution of bisulphate of calcium. By repeating this process the preservation may be extended by the addition of a solution of gelatine or the white of an egg to the salt and water.

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### **How to Cut or Bore Glass**

Any hard steel tooth will cut glass with great facility when kept wet with camphor dissolved in turpentine. A drill bow may be used, or even the hand alone. A hole may be readily enlarged by a round file. The ragged edges of glass vessels may also be thus easily smoothed by a flat file. Flat window glass can readily be sawed with a watch-spring saw by the aid of this solution. In short, the most brittle glass can be wrought almost as easily as brass, by the use of cutting tools kept constantly wet with camphorated oil of turpentine.

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### **How to Make Hens Lay in Winter**

Give a portion of minced meat, mixed with their other food, every day, or as often as convenient, and see that they have plenty of gravel, old plastering, or powdered egg-shells. The latter may be mixed with their food. Without some substance of this kind, which cannot be obtained when the ground is frozen or covered with snow, there will be nothing to form the shell.

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### **Speed of Ice Boats**

There is no known mode of terrestrial locomotion which outrivals the ice yacht in speed. It travels at a mile a minute with ease, outstrips fast railway trains and, when contrasted with the ordinary sailing vessels, is handled with ease and safety. It travels faster than the wind because it acquires a momentum and, in the lulls of the wind, its inertia carries it along.



## Naturalization Laws of the United States

The conditions under and the manner in which an alien may be admitted to become a citizen of the United States are prescribed by Sections 2165-74 of the Revised Statutes of the United States.

*Declaration of Intention*—The alien must declare upon oath, before a circuit or district court of the United States, or a district or supreme court of the Territories, or a court of record of any of the States having common law jurisdiction, and a seal and clerk, two years at least prior to his admission, that it is, bona fide, his intention to become a citizen of the United States, and to renounce forever all allegiance and fidelity to any foreign prince or State.

*Oath on Application for Admission*—He must, at the time of his application to be admitted, declare on oath, before some one of the courts above specified, "that he will support the Constitution of the United States, and that he absolutely and entirely renounces and abjures all allegiance and fidelity to every foreign prince, potentate, State or sovereignty.

*Final Petition*—Not less than two years nor more than seven after he has made such declaration he shall file a petition, signed by himself and verified, in which he shall state his name, place of residence, occupation, date and place of birth, place from which he emigrated, name of the vessel on which he arrived, the time when and the place and name of the court where he declared his intention of becoming a citizen; if he is married, he shall state the name of his wife, the country of her nativity and her place of residence at the time the petition is filed, and if he has children, the name, date and place of birth and place of residence of each child living. The petition shall also set forth that he is not a disbeliever in or opposed to organized government or a member of any body of persons opposed to organized government, and that he is not a polygamist or a believer in polygamy; that he intends

to become a citizen of and to live permanently in the United States, and every other fact material to his naturalization and required to be proved upon the final hearing of his application. The petition shall be verified by the affidavits of at least two credible witnesses who are citizens. At the time of the filing of the petition there shall be also filed a certificate from the department of commerce and labor stating the date, place and manner of his arrival in the United States and the declaration of intention of such petitioner, which certificate and declaration shall be attached to and be a part of his petition.

*Conditions for Citizenship.*—If it shall appear to the satisfaction of the court to which the alien has applied that he has resided continuously within the United States for at least five years, and within the State or Territory where such court is at the time held one year at least; and that during that time "he has behaved as a man of good moral character, attached to the principles of the Constitution of the United States, and well disposed to the good order and happiness of the same," he will be admitted to citizenship.

*Titles of Nobility*—If the applicant has borne any hereditary title or order of nobility, he must make an express renunciation of the same at the time of his application.

*Soldiers*—Any alien of the age of twenty-one years and upward, who has been in the armies of the United States and has been honorably discharged therefrom, may become a citizen on his petition, without any previous declaration of intention, provided that he has resided in the United States at least one year previous to his application, and is of good moral character.

*Minors*—Any alien under the age of twenty-one years who has resided in the United States three years next preceding his arriving at that age, and who has continued to reside therein to the time he may make application to be admitted a citizen thereof, may, after he arrives at the age of twenty-one years, and after he has re-

sided five years within the United States, including the three years of his minority, be admitted a citizen; but he must make a declaration on oath and prove to the satisfaction of the court that for two years next preceding it has been his bona fide intention to become a citizen.

*Children of Naturalized Citizens*—The children of persons who have been duly naturalized, being under the age of twenty-one years at the time of the naturalization of their parents, shall, if dwelling in the United States, be considered as citizens thereof.

*Citizens' Children Who Are Born Abroad*—The children of persons who now are or have been citizens of the United States are, though born out of the limits and jurisdiction of the United States, considered as citizens thereof.

*Protection Abroad to Naturalized Citizens*—Section 2000 of the Revised Statutes of the United States declares that "all naturalized citizens of the United States while in foreign countries are entitled to and shall receive from this Government the same protection of persons and property which is accorded to native-born citizens."

*Opponents of Organized Government Excluded*—No person who disbelieves in or who is opposed to organized government, or who is a member of or affiliated with any organization entertaining and teaching such disbelief in or opposition to organized government, or who advocates or teaches the duty, necessity or propriety of the unlawful assaulting or killing of any officer or officers of the government of the United States or of any other organized government, because of his or their official character, or who is a polygamist, shall be naturalized.

*Ability to Speak English Required*—No alien shall hereafter be naturalized or admitted as a citizen of the United States who cannot speak the English language. This requirement does not apply to those physically unable to comply with it, or to those making homestead entries upon the public lands of the United States.

**Tributes to the Fair Sex**

Confucius—"Woman is the masterpiece."

Voltaire—"Women teach us repose, civility, and dignity."

John Quincy Adams—"All that I am my mother made me."

Ruskin—"Shakespeare has no heroes—he has only heroines."

Whittier—"If woman lost us Eden, such as she alone can restore it."

Bulwer—"To a gentleman every woman is a lady in right of her sex."

Lamartine—"There is a woman at the beginning of all great things."

E. S. Barrett—"Woman is last at the cross and earliest at the grave."

Gladstone—"Woman is the most perfect when the most womanly."

Sandl—"A handsome woman is a jewel; a good woman is a treasure."

Richter—"No man can either live piously or die righteous without a wife."

N. P. Willis—"The sweetest thing in life is the unclouded welcome of a wife."

Heine—"Handsome women without religion are like flowers without perfume."

Beecher—"Women are a new race, recreated since the world received Christianity."

Voltaire—"All the reasonings of a man are not worth one sentiment of a woman."

Leopold Schefer—"But one thing on earth is better than a wife—that is a mother."

Michelet—"Woman is the Sunday of man; not his repose only, but his joy, the salt of his life."

Luther—"Earth has nothing more tender than a woman's heart when it is the abode of pity."

Shakespeare—"For where is any author in the world teaches such beauty as a woman's eyes?"

Margaret Fuller Ossoli—"Woman is born for love, and it is impossible to turn her from seeking it."

Louis Desnoyers—"A woman may be ugly, ill shaped, wicked, ignorant, silly, and stupid, but hardly ever ridiculous."



### **Weight of Various Materials in Pounds (Avoirdupois) Per Cubic Foot**

Pure Gold 1,203.6, Standard Gold 1,102.9, Hammered Gold 1,210.11, Pure Silver 654.6, Hammered Silver 656.9, Standard Silver 658.4, Cast Brass 524.8, Brass Wire 534, Bismuth (Cast) 613.9, Antimony 418.9, Bronze 513.4, Cobalt (Cast) 488.2, Copper (Cast) 459.3, Copper (Sheet) 557.2, Copper (Wire) 554.9, Wrought Iron 486.75, Iron Plates 481.5, Cast Iron 450.4, Gun Metal 543.75, Cast Lead 709.5, Rolled do, 711.75, Red Lead 558.75, Tin 455.7, Platinum (Pure) 1,218, Hammered do. 1,271, Mercury 60 deg., Fluid 848, Mercury (Solid) 977, Nickel (Cast) 487.9, Steel (Plates) 480.75, Steel (Soft) 489.6, Type Metal 653.1, Zinc (Cast) 439, Granite 165.75, Millstone 155.3, Marble (Mean, of nineteen kinds) 180, Grindstones 133.9, Firebrick 137.5, Tile 114.44, Brick (Mean) 102, Clay 102, Limestone (Mean, of seven sorts) 184.1, Loose Earth or Sand 95, Coarse Sand 112.5, Ordinary Soil 124, Mud 102, Clay and Stones 160, Slate 167 to 181.25, Plaster Paris 73.5, Plumbago 131.35, Anthracite Coal from 63.25 to 67.00, Ohio Channel coal about 53, Charcoal from Hard Wood 18.5, from Soft Wood 18, Port Wine 62.31, Fresh Water 62.5, Sea Water 64.3, Dead Sea Water 77.5, Vinegar 67.5, Alum 107.10, Asbestos (Starry) 192.1, Ice at 32 degs. 57.5, Sulphur 127.1, Peat 75 to 83.1, Marl (Mean) 109.33, Hydraulic Lime 171.60, Quartz 166.25, Rock Crystal 170.94, Salt (Common) 133.12, Lard 59.20, Whale Oil 57.70, Olive Oil 57.19.

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### **Specific Gravity of Various Substances**

Water, 100; Sea-water, 103; Alcohol, 84; Wine, 100; Cider, 102; Cow's milk, 103; Ebony, 133; Mahogany, 106; Cedar, 61; Fir, 55; Walnut, 67; Maple, 75; Ash, 84; Bar iron, 779; Copper, 895; Silver, 1,047; Lead, 1,135; Mercury, 1,357; Gold, 1,926; Platina, 2,150; Ice, 92; Butter, 94; Clay, 120; Ivory, 183; Marble, 270; Glass, 289; Diamond, 353.

### Temperature in United States—Average of Three Years

|                                 |      |
|---------------------------------|------|
| Prescott, Arizona .....         | 51.9 |
| Jacksonville, Florida .....     | 70.4 |
| New Orleans, Louisiana.....     | 70.2 |
| Galveston, Texas .....          | 70.5 |
| Mobile, Alabama .....           | 67.4 |
| Jackson, Mississippi .....      | 66   |
| Little Rock, Arkansas.....      | 62.3 |
| Charleston, South Carolina..... | 66.9 |
| Ft. Gibson, Oklahoma.....       | 59.4 |
| Charlotte, North Carolina.....  | 60.6 |
| Atlanta, Georgia .....          | 61.7 |
| Memphis, Tennessee .....        | 61.7 |
| Norfolk, Virginia .....         | 60.1 |
| Louisville, Kentucky .....      | 57.4 |
| San Francisco, California ..... | 55   |
| Washington, D. C.....           | 55   |
| St. Louis, Missouri .....       | 55   |
| Baltimore, Maryland .....       | 56   |
| Harrisburg, Pennsylvania .....  | 54   |
| Wilmington, Delaware .....      | 53   |
| Trenton, New Jersey.....        | 53   |
| Cincinnati, Ohio .....          | 56   |
| Portland, Oregon .....          | 51.4 |
| Boise City, Idaho.....          | 49.4 |
| Salt Lake City, Utah.....       | 50.3 |
| Morgantown, West Virginia.....  | 53.1 |
| Indianapolis, Indiana .....     | 53.3 |
| Leavenworth, Kansas .....       | 53.3 |
| Santa Fe, New Mexico.....       | 46.8 |
| Spokane Falls, Washington ..... | 46.2 |
| New London, Connecticut .....   | 49.9 |
| Chicago, Illinois .....         | 48.8 |
| Winnemucca, Nevada .....        | 48   |
| Des Moines, Iowa.....           | 48.5 |
| Omaha, Nebraska .....           | 49.5 |
| Denver, Colorado .....          | 49.2 |
| Boston, Massachusetts .....     | 48.4 |
| Albany, New York.....           | 50.4 |
| Providence, Rhode Island.....   | 48   |
| Detroit, Michigan .....         | 49.7 |
| Ft. Randall, Dakota.....        | 47   |
| Sitka, Alaska .....             | 43.9 |

|                             |      |
|-----------------------------|------|
| Concord, New Hampshire..... | 46   |
| Augusta, Maine .....        | 45   |
| Madison, Wisconsin .....    | 45   |
| Helena, Montana .....       | 42.6 |
| Burlington, Vermont .....   | 45   |
| St. Paul, Minnesota.....    | 43.9 |

### **Federal Reserve Act**

The Federal Reserve Act, 1913, substituted for the national banking system a new banking structure which provides (1) an elastic bank-note issue and (2) a combination of banking resources, thereby preventing the panics inevitable under the defective provisions of the old law. It divides the country into 12 districts. In each district there is a Federal reserve bank whose capital is furnished by the "member banks," comprising all the national banks (and some of the State banks) within the district. The primary function of the Federal Reserve Banks is to hold the reserves of the member banks and to issue Federal reserve notes. Any member bank may deposit its commercial paper—notes and bills discounted for customers—and receive in exchange reserve notes. The essence of the system is the consolidation of the country's banking resources in such a way that credit and currency will be available wherever and whenever needed. Under the successful operation of the act the Federal Reserve Banks are coming to hold the bulk of the country's gold in 12 centers, where it is utilized as a reserve for the Nation's credit and a bulwark against any crisis which the war may bring.

### **The Velocity of Insects' Wings**

According to a French physiologist, the wing of the ordinary house fly makes 330 strokes in one second; the wing of the bumble bee, 240; the wing of the honey bee, 190; the wing of the wasp, 110; the wing of the dragon fly, 28; the wing of the sparrow, 13; the wing of the wild duck, 9; the wing of the house pigeon, 8; the wing of the osprey, 6.

**Dates of First Occurrences**

Postoffices were first established in 1464.

Printed music notes were first used in 1473.

The first watches were made at Nuremberg in 1477.

America was discovered in 1492.

The first printing press was set up at Copenhagen in 1493.

Durer gave the world a prophecy of future wood-engraving in 1527.

Jergens set the spinning wheel in motion in 1530.

Modern needles first came into use in 1545.

The first knives were used in England and the first wheeled carriages in France in 1559.

Religious liberty was granted to the Huguenots in France in 1562, and was followed by the massacre of St. Bartholomew in 1572.

Cervantes wrote Don Quixote in 1573.

The first newspaper was published in England in 1588.

Telescopes were invented in 1590.

The first printing press in the United States was introduced in 1629.

The first air-pump was made in 1650.

The first newspaper advertisement appeared in 1652.

The first copper cent was coined in New Haven in 1687.

The first steam engine on this continent came from England in 1753.

The first balloon ascent was made in 1783.

The first society for the Promotion of Christian Knowledge was organized in 1698.

The first attempt to manufacture pins in this country was made soon after the war of 1812.

The first prayerbook of Edward VI came into use by authority of Parliament on Whit Sunday, 1549.

Glass windows first introduced into England in the eighth century.

The first steamboat plied the Hudson in 1807.

The first sawmakers' anvil was brought to America in 1819.



The first use of a locomotive in this country was in 1820.

Kerosene was first used for lighting purposes in 1826.

The first horse railroad was built in 1826-7.

The first lucifer match was made in 1829.

The first iron steamship was built in 1830.

The first steel pen was made in 1830.

Omnibuses were introduced in New York in 1830.

Ships were first "copper-bottomed" in 1837.

Envelopes were first used in 1839.

Anesthesia was discovered in 1844.

Coaches were first used in England in 1569.

The first steel plate was discovered in 1830.

The Franciscans arrived in England in 1224.

Gold was first discovered in California in 1848.

The first telescope was used in England in 1608.

Christianity was introduced into Japan in 1549.

First almanac printed by George Von Furbach in 1460.

Percussion arms were used in the United States Army in 1830.

The first glass factory in the United States was built in 1780.

The first complete sewing machine was patented by Elias Howe, Jr., in 1846.

The first temperance society in this country was organized in Saratoga County, N. Y., in March, 1808.

The first coach in Scotland was brought thither in 1501, when Queen Mary came from France. It belonged to Alexander Lord Seaton.

The first daily newspaper appeared in 1702. The first newspaper printed in the United States was published in Boston on September 25, 1790.

The first telegraphic instrument was successfully operated by S. F. B. Morse, the inventor, in 1835, though its utility was not demonstrated to the world until 1842.

The first Union flag was unfurled on the 1st of January, 1776, over the camp at Cambridge. It had thirteen stripes of white and red, and retained the English cross in one corner.

When Captain Cook first visited Tahiti, the natives were using nails of wood, bone, shell and stone. When they saw iron nails they fancied them to be shoots of some very hard wood, and, desirous of securing such a valuable commodity, they planted them in their gardens.

In 1750 the "shoe-black" came into vogue. The poet Gay, in his day, refers to the business, describing a mother as instructing her son in his calling:

"Go thrive; at some frequented corner stand;  
This brush I give thee, grasp it in thy hand;  
Temper the foot within this vase of oil,  
And let the little tripod aid thy toil."

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### **Horsepower of Boilers**

Admitting a good natural draught for the furnace, for the evaporation of one cubic foot of water per hour, the boiler should have ten feet square of heating surface. This evaporation per hour may be taken to represent one horsepower. The coal required to effect this degree of evaporation will generally be about eight pounds, and the grate surface needed for the combustion of this amount of coal per hour is about half a square foot. Estimates of horsepower in boilers, therefore, take into account ten square feet of heating surface, half a square foot of grate surface, eight pounds of good coal, and one cubic foot of water per hour for each unit of horsepower that the boiler is expected to develop.

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### **Facts as to Sounds**

In air sound travels from 1,130 to 1,140 ft. per second. In water, it passes at the rate of 4,700 feet per second. A bell sounded under water may be heard under water at 1,200 feet distance. Sounds are distinct at twice the distance on water that they are on land. On Table Mountain, a mile above Cape Town, every noise in it and even words may be heard distinctly. Dr. Jamieson says that in calm weather he heard every word of a sermon at the distance of two miles.

### Age of Soldiers in the Civil War

The records in Washington show that in the Civil War the enlisted "men" were comprised of the following grades:

|                         |           |
|-------------------------|-----------|
| 10 years and under..... | 25        |
| 11 " " " .....          | 38        |
| 12 " " " .....          | 225       |
| 13 " " " .....          | 300       |
| 14 " " " .....          | 1,523     |
| 15 " " " .....          | 104,978   |
| 16 " " " .....          | 231,051   |
| 17 " " " .....          | 844,981   |
| 18 " " " .....          | 1,151,438 |
| 21 " " " .....          | 2,159,798 |
| 22 " " over .....       | 618,511   |
| 25 " " " .....          | 46,626    |
| 44 " " " .....          | 16,971    |
| Total .....             | 5,176,474 |

### Miles of Various Nations

|                                                |                  |
|------------------------------------------------|------------------|
| The English and American statute mile is ..... | 1,760 yards      |
| The U. S. nautical mile is.....                | 2,026.5 "        |
| The German (geographical) mile is...           | 8,114 "          |
| The Scotch mile is.....                        | 1,976 "          |
| The Irish mile is.....                         | 2,240 "          |
| The Dutch mile is.....                         | 6,394 "          |
| The Australian mile is.....                    | 8,297 "          |
| The Swiss mile is.....                         | 9,153 "          |
| The Danish mile is.....                        | 8,243 "          |
| The Maltese mile is.....                       | 1,765 "          |
| The Roman mile is.....                         | 1,628 "          |
| The Tuscan mile is.....                        | 1,808 "          |
| The Russian mile (verst) is...                 | 1,167 or 1,337 " |
| The Turkish mile is.....                       | 1,826 "          |
| The Arabian mile is.....                       | 2,143 "          |

### Introduction of Postage Stamps

The use of postage stamps, one of the great reforms advocated by Rowland Hill, was introduced into England through his efforts May 6, 1840. They began to be used in this country in 1847.

**Radium and Radio-Activity**

X-Rays were discovered by Prof. Roentgen 1895.

Uranium rays discovered by H. Becquerel, 1896.

Radium discovered by Prof. and Mme. Curie, 1898.

Alpha, beta and gamma rays discovered by Prof. Rutherford, 1899.

Uranium X discovered by William Crookes, 1900.

Thorium X and radium emanation discovered by Prof. Rutherford, 1902-03.

Production of helium by emanation of radium discovered by Prof. Ramsay and Mr. Soddy, 1903.

The discovery of H. Becquerel that uranium and uranium compounds emitted rays, which, like X-rays, affected photographic plates, passed through wood and iron, and rendered a gas a conductor of electricity, led to the discovery of radium. Mrs. Curie, in experimenting with pitchblende, the chief ingredient of which is uranium oxide, noticed that the crude ore showed the said properties much more readily than the same weight of pure uranium salt. She concluded that the ore must contain some element having a greater radio-activity than the uranium oxide, and, with the aid of her husband, proceeded to separate from the ore each known element and determine after each separation which of the two parts contained the greater amount of radio-activity until finally only the pure radium salt remained, not more than two or three grains from several tons of pitchblende. Cathode X-rays consist of streams of negatively charged particles shot off with a velocity of about 20,000 miles per second from the negative electrode of an exhausted bulb in which an electrical discharge is passing. These particles are of such a size, that about 1,000 of them equal the atom of hydrogen, the smallest atom known. Some investigators think that X-rays are ethereal and similar to light waves. They differ from cathode rays in that they are not deflected by a magnet or by



bodies charged with static electricity, and do not impart negative charges to objects upon which they fall. X-rays originate where the cathode rays strike the walls of the tube or any object within the tube.

Radium rays and those emitted by uranium, thorium, polonium and actinium, all radio-active, are identical in some respects with cathode rays, but their velocity is much greater (nearly that of light, 186,000 miles a second), and they are spontaneously emitted. Radium rays in a strong magnetic field show various distinctive properties according to which they are divided into alpha, beta and gamma rays.

Radium sends out rays to which no body is absolutely impenetrable. They produce phosphorescence in many bodies. They are self-luminous. The light of radium salts resembles that of the glow-worm. Radium salts constantly develop heat; one gram of radium develops eighty calories or sufficient to raise the temperature of 80 grams of water one degree. Radium in a pasteboard or metal box affects the human eye. If radium in a tube is placed against the skin for a short time, a scab forms 15 to 20 days later. Longer application causes a bad wound, lameness, and even death. Radium seems to develop energy constantly. This is explained on two theories, either that radium is an element in process of development, or that it absorbs certain unknown rays and transforms them into radio-active energy. Possibly radium is an unstable chemical element and helium is one of the products of its disintegration. No loss of weight or activity has as yet been observed in radium.

All these discoveries and observations seem to lead to the startling conclusion that in the case of certain elements at least the dreams of the ancient alchemists are true, for these elements all appear to be slowly but spontaneously transforming themselves into other elements. Is there a natural process which does for the atoms what the life process does among the molecules, continually disintegrating them into simpler forms

and building these up again into more complex ones?

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### How Many Muscles a Human Body Has

A muscle consists of 3 parts, muscular flesh or belly, fascia and tendon. The swelling of the belly draws together the bones fixed to tendons. The head has 77 muscles; the eye, 8; the nose, 1; hips, 8; jaw, 8; tongue, 11; larynx, 11; ear, 11; head and neck, 17; to move the hairy scalp, 1; the eyebrows, 1; the chest, abdomen, and loins, 5; the shoulder, 15; the arm and wrist, 15; the hands and fingers, 23; the hip 10; the thigh, 14; leg and foot, 24. Contracting muscles are called *flexor* muscles; expanding muscles, *extensor*.

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### Mother Shipton's Prophecy

The lines were first published in England in 1485, before the discovery of America, and before any of the discoveries and inventions mentioned therein. All the events predicted have come to pass except that in the last two lines.

Carriages without horses shall go,  
And accidents fill the world with woe.  
Around the world thoughts shall fly  
In the twinkling of an eye.  
Waters shall yet more wonders do,  
Now strange, yet shall be true.  
The world upside down shall be,  
And gold be found at root of tree.  
Through hills man shall ride,  
And no horse nor ass be at his side.  
Under water man shall walk,  
Shall ride, shall sleep, shall talk.  
In the air men shall be seen  
In white, in black, in green.  
Iron in the water shall float,  
As easy as a wooden boat.  
Gold shall be found 'mid stone,  
In a land that's now unknown.  
Fire and water shall wonders do,  
England shall at last admit a Jew.  
And this world to an end shall come  
In eighteen hundred and eighty-one.

### Railway Signals

One whistle signifies "down brakes."

Two whistles signify "off brakes."

Three whistles signify "back up."

Continued whistles signify "danger."

Rapid short whistles "a cattle alarm."

A sweeping parting of the hands on a level with the eyes signifies "go ahead."

Downward motion of the hands with extended arms signifies "stop."

Beckoning motion of one hand signifies "back."

Red flag waved up the track signifies "danger."

Red flag stuck up by the roadside signifies "danger ahead."

Red flag carried on a locomotive signifies "an engine following."

Red flag hoisted at a station is a signal to "stop."

Lantern at night raised and lowered vertically is a signal "to start."

Lantern swung at right angles across the track means "stop."

Lanterns swung in a circle signify "back the train."

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### Melting Point of Metals

|                  |       |       |                           |
|------------------|-------|-------|---------------------------|
| Platinum         | ..... | 3,080 | degrees Fahr. (Pouillet). |
| Wrought iron     | ....  | 2,822 | " " "                     |
| Steel            | ..... | 2,462 | " " "                     |
| Cast iron (gray) | ..    | 2,210 | " " "                     |
| Gold             | ..... | 2,192 | " " "                     |
| Silver           | ..... | 1,832 | " " "                     |
| Antimony         | ..... | 842   | " " (1. Lowthian Bell.)   |
| Zinc             | ..... | 782   | " " "                     |
| Lead             | ..... | 620   | " " "                     |
| Tin              | ..... | 475   | " " "                     |

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### Rule to Calculate the Horsepower of an Engine

This rule will prove correct for all ordinary engines; but there may be a very slight variation in the case of an extra long or extra short stroke.

**RULE.**—Multiply the diameter of the cylinder in inches by itself—in other words, square the diameter in inches, and divide by four.

### How the Presidents Died

**GEORGE WASHINGTON**—His death was the result of a severe cold, contracted while riding around his farm in a rain and sleet storm on December 10, 1799. The cold increased, and was followed by a chill, which brought on acute laryngitis. His death occurred on December 14, 1799. He was 68 years of age.

**JOHN ADAMS**—He died from old age, having reached his 91st milestone. Though active mentally, he was nearly blind and unable to hold a pen steadily enough to write. He passed away without a pain on July 4, 1826.

**THOMAS JEFFERSON**—He died at the age of 83, a few hours before Adams, on July 4, 1826. His disease was chronic diarrhea, superinduced by old age.

**JAMES MADISON**—He, too, died of old age, and peacefully, on June 28, 1836. His faculties were undimmed. He was 85.

**JAMES MONROE**—At the time of his death, which occurred in the 73rd year of his age, on July 4, 1831, it was assigned to enfeebled health.

**JOHN QUINCY ADAMS**—He was stricken with paralysis on February 21, 1848, while addressing the Speaker of the House of Representatives, being at the time a member of Congress. He died in the rotunda of the Capitol. He was 81 years of age.

**ANDREW JACKSON**—He died on June 8, 1845, 78 years old. He suffered from consumption, and finally dropsy, which made its appearance about six months before his death.

**MARTIN VAN BUREN**—He died on July 24, 1862, from a violent attack of asthma, followed by catarrhal affections of the throat and lungs. He was 80 years of age.

**WILLIAM HENRY HARRISON**—The cause of his death was pleurisy, the result of a cold which he caught on the day of his inauguration. He died April 4, 1841, 68 years of age.

**JOHN TYLER**—He died on January 17, 1862, at the age of 72.



**JAMES K. POLK**—Died of cholera morbus on June 15, 1849, aged 54 years.

**ZACHARY TAYLOR**—He died of cholera morbus in the White House, July 9, 1850, 65 years old.

**MILLARD FILLMORE**—Died from a stroke of paralysis on March 8, 1874, in his 74th year.

**FRANKLIN PIERCE**—His death was due to abdominal dropsy, and occurred on Oct. 8, 1869, in the 65th year of his life.

**JAMES BUCHANAN**—His death occurred on June 1, 1868, and was caused by rheumatic gout. He was 77 years of age.

**ABRAHAM LINCOLN**—Shot by J. Wilkes Booth at Ford's Theater, Washington, April 14, 1865; died the following day, aged 56.

**ANDREW JOHNSON**—He died from a stroke of paralysis, July 31, 1875, aged 67.

**ULYSSES S. GRANT**—A cancer at the root of the tongue caused his death on July 23, 1885, at the age of 63 years.

**JAMES A. GARFIELD**—Shot by a disappointed office-seeker on July 2, 1881; died Sept. 15; 49 years of age.

**CHESTER A. ARTHUR**—Died of Bright's disease Nov. 18, 1886; 56 years old.

**GROVER CLEVELAND**—He died of pneumonia, June 24, 1908, at Princeton, N. J., age 71 years.

**BENJAMIN HARRISON**—Died of pneumonia, March 3, 1901; 67 years of age.

**WILLIAM McKINLEY**—Shot by an anarchist Sept. 6, 1901; died Sept. 14; 58 years of age.

**THEODORE ROOSEVELT**—Died of inflammatory rheumatism, January 6, 1919, at Sagamore Hill, Oyster Bay, L. I.; 60 years of age.

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#### Number of Trees Required per Acre

|                           |       |                            |     |
|---------------------------|-------|----------------------------|-----|
| 4 ft. apart each way.     | 2,720 | 15 ft. apart each way.     | 200 |
| 5     "                 " | 1,742 | 18     "                 " | 135 |
| 6     "                 " | 1,200 | 20     "                 " | 110 |
| 8     "                 " | 680   | 25     "                 " | 70  |
| 10    "                 " | 430   | 30     "                 " | 50  |
| 12    "                 " | 325   | 33     "                 " | 40  |

### How to Make Liquid Glue

Take soft water, 1 quart; best pale glue, 2 pounds; dissolve in a covered vessel by the heat of a water bath or in a vessel immersed in boiling water; cool, and add, gradually, of nitric acid (specific gravity 1.335) 7 ounces; when cold put it into bottles. It is very strong and does not gelatinize.

The following formula, known as "Chinese cement," produces a cement for porcelain, glass, fancy work, jewelry, etc., so strong that wood or porcelain can be joined together so firmly that they will break anywhere else rather than where cemented: Take of finest pale orange shellac (broken small) 4 ounces; strongest rectified spirits, 3 ounces, and digest them together in a corked bottle in a warm place until dissolved. It should have about the consistency of molasses.

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### SOME HOWS AND WHYS

**WHY CANNEL COAL IS SO CALLED**—Cannel coal is a corruption of candle coal. This kind of coal is very hard and can be cut into blocks or strips and, as it burns with a clear, yellow flame, was often used when first known as a substitute for candles.

**WHY A SHOE SHINES WHEN POLISHED WITH BLACKING**—The philosophy of polish on any substance is simply the production by friction of such smoothness of the surface layer of its particles that they readily reflect the rays of light falling upon them. Different articles are used to aid in procuring this smoothness on different substances. With leather the best substance seems to be a paste containing bone-black—that is, the powder obtained from charred bones or ivory—to which is added a small quantity of acid to dissolve it, oil to preserve the soft texture of the leather, and treacle and gum to render the mass adhesive. A small portion of this rubbed over leather is but slightly absorbed, but renders the whole surface black, and by the help of vigorous friction the smooth surface of the leather necessary for the shining effect is induced.

**THE CAUSE OF A WHIP CRACK OR POP**—The cracking of a knot on the end of a whip is simply the concussion of the air produced by its rapid movement. The effect differs with the material used for the whip lash, because some textures present a much greater resistance to the air than others.

**WHY SHOES ARE HOTTER FOR BEING DUSTY**—Because dull, dusty shoes will absorb heat from the sun, earth and air, but shoes brightly polished throw off the heat of the sun by reflection.

**WHY THE FLASH OF A GUN FIRED AT A DISTANCE IS SEEN LONG BEFORE THE REPORT IS HEARD**—Because light travels much faster than sound. Light would go four hundred and eighty times around the whole earth while sound is going thirteen miles.

**HOW THE VELOCITY OF LIGHT COMPARES WITH THE SPEED OF A LOCOMOTIVE**—Light passes from the sun to the earth in about eight minutes; distance 95,000,000 miles; a locomotive, traveling at the rate of a mile a minute, would require upward of 180 years to accomplish the same journey.

**HOW TO KILL THE NERVE OF A HOLLOW TOOTH**—Take half dram white oxide of arsenic; one dram sulphate of morphia; mix with a little creosote and apply to the cavity of the tooth, previously cleansed.

**HOW TO DESTROY THE TASTE OF CASTOR OIL**—A good way is to beat the castor oil with the white of an egg until both are thoroughly mixed.

**HOW TO TAKE BRUISES OUT OF FURNITURE**—Wet the part with warm water; double a piece of brown paper five or six times, soak it in warm water, and lay it on the place; apply on that a warm, but not hot, flat-iron till the moisture is evaporated. If the bruise be not gone, repeat the process. After two or three applications the dent or bruise will be raised to the surface. If the bruise be small, merely soak it with warm water, and hold a red-hot iron near the surface, keeping the surface continually wet; the bruise will soon disappear.

**HOW TO PREVENT IVORY HANDLES FROM CRACKING**—When the blades of knives require washing or standing in water, it should be done in a pitcher, with water enough to cover the blades, but not to touch the handles; and the water no hotter than is absolutely necessary. Soaking the handles in water makes them crack.

**HOW TO CLEANSE FEATHERS**—Feathers are prepared by exposing them to the sunshine or in a stove until perfectly dry, and then beating them to remove dust and loose dirt. When carelessly collected and dirty, they may be cleansed with lime-water, or, still better, with a weak solution of carbonate of soda, or with water containing a little solution of 'chloride of lime; after which they are rinsed in clean water, and dried as before. Old feathers are purified and cleansed in the same way.

**MANAGEMENT OF BROOMS**—If brooms are wetted in boiling suds once a week, they will become very tough, will not cut a carpet, will last much longer, and always sweep like a new broom.

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### **Ships**

The first seen in Greece arrived at Rhodes from Egypt, 1485 before Christ; the first double-decked one built in England was of 1,000 tons burthen, by order of Henry VII., 1509, it was called the Great Harry, and cost £14,000; before this, 24 gun ships were the largest in the navy, and these had no portholes, the guns being on the upper decks only. Port-holes and other improvements were invented by Decharges, a French builder at Brest, in the reign of Louis XII., 1500.

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### **Sayings by the Seven Wise Men of Greece**

"Know thyself."—Solon.

"Consider the end."—Chilo.

"Know thy opportunity."—Pittacus.

"Most men are bad."—Bias.

"Nothing is impossible to industry."—Periander.

"Avoid excesses."—Cleobulus.

"Suretyship is the precursor of ruin."—Thales.



### Velocity of Drums—To Find Their Required Diameter

Suppose a drum 30 inches in diameter to make 50 revolutions per minute; required the diameter of another to make 100 revolutions per minute, proceed thus:  $30 \times 50 = 1500 \div 100 = 15$  inches.

### Breaking and Crushing Strains of Iron and Steel

|                                      | Per sq.<br>in. of sec. |      |
|--------------------------------------|------------------------|------|
| Breaking strain of wrought iron..... | 23                     | tons |
| Crushing " " " .....                 | 17                     | "    |
| Breaking strain of cast iron.....    | 71½                    | "    |
| Crushing " " " .....                 | 50                     | "    |
| Breaking strain of steel bars.....   | 50                     | "    |
| Crushing " " " .....                 | 166                    | "    |

### How to Compute the Quantity of Water Required for a Boiler

Add fifteen to the pressure per square inch in pounds on a given boiler and divide this sum by 18, and then multiply the quotient by .24; the resulting product will be the number of gallons of water required by that boiler per horsepower per hour.

### What We Know of Color

All that we know of color, its causes and effects, is in connection with the wave theory of light. Color depends upon the number of light waves reflected from any object impinging upon the retina of the eye. In red there are about 40,000 waves to the inch, and these will strike the eye at the rate of 447 millions of millions of pulsations per second. In violet there are 57,000 waves to the inch and 690 millions of millions of pulsations per second. The other colors have wave light intermediate between these two. Color does not, therefore, exist either in the object, or in the brain, or in the mind of the observer. It is an effect. There can be no appearance of a fire on a desert island where there is no eye within seeing distance. The chemical process called combustion goes on, but there is no appearance of the flame save when its waves strike upon the retina of an eye.

**Casualties in Spanish-American War**

**THE NAVY**—Lost on the Maine, 2 officers, 257 men; Cienfuegos, 1 killed, 11 wounded; Cardenas, 5 killed, 3 wounded; San Juan, 1 killed, 7 wounded; Guantanamo, 6 killed, 16 wounded; Santiago, 2 killed, 10 wounded; 29 died from injuries received in battle, 56 from disease.

**THE ARMY**.—Santiago campaign: Killed, officers 23, men 237; wounded, officers 99, men 1,332. Porto Rico campaign: Killed, 3 men; wounded, 4 officers, 36 men. Manila campaign: Killed, 17 men; wounded, 10 officers, 96 men. Died of disease, 80 officers, 2,485 men.

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**Symbolic Meaning of Colors**

White is the emblem of light, religious purity, innocence, faith, joy and life. In the judge, it indicates integrity; in the sick, humility; in the woman, chastity.

Red, the ruby, signifies fire, divine love, heat of the creative power, and royalty. White and red roses express love and wisdom. The red color of the blood has its origin in the action of the heart, which corresponds to, or symbolizes love. In a bad sense, red corresponds to the infernal love of evil, hatred, etc.

Blue, or the sapphire, expresses heaven, the firmament, truth from a celestial origin, constancy and fidelity.

Yellow, or gold, is the symbol of the sun, of the goodness of God, of marriage and faithfulness. In a bad sense yellow signifies inconstancy, jealousy and deceit.

Green, the emerald, is the color of the spring, of hope, particularly of the hope of immortality and of victory, as the color of the laurel and palm.

Violet, the amethyst, signifies love and truth, or passion and suffering. Purple and scarlet signify things good and true from a celestial origin.

Black corresponds to despair, darkness, earthliness, mourning, negation, wickedness and death.

**Table Showing the Number of Days From Any One Day in One Month to the Same Day in Another**

| From<br>To | Jan | Feb. | Mar. | April. | May | June | July. |     | Sept. | Oct. | Nov. | Dec. |
|------------|-----|------|------|--------|-----|------|-------|-----|-------|------|------|------|
| Jan. ..    | 365 | 31   | 59   | 90     | 120 | 151  | 181   | 212 | 243   | 273  | 304  | 334  |
| Feb. ..    | 334 | 365  | 28   | 59     | 89  | 120  | 150   | 181 | 212   | 242  | 273  | 303  |
| Mar. .     | 306 | 337  | 365  | 31     | 61  | 92   | 122   | 153 | 184   | 214  | 245  | 275  |
| April .    | 275 | 306  | 334  | 365    | 30  | 61   | 91    | 122 | 153   | 183  | 214  | 244  |
| May ..     | 245 | 276  | 304  | 335    | 365 | 31   | 61    | 92  | 123   | 153  | 184  | 214  |
| June .     | 214 | 245  | 273  | 304    | 334 | 365  | 30    | 61  | 92    | 122  | 153  | 183  |
| July ..    | 184 | 215  | 243  | 274    | 304 | 335  | 365   | 31  | 62    | 92   | 123  | 153  |
| Aug. .     | 153 | 184  | 212  | 243    | 273 | 304  | 334   | 365 | 31    | 61   | 92   | 122  |
| Sept. .    | 122 | 153  | 181  | 212    | 242 | 273  | 303   | 334 | 365   | 30   | 61   | 91   |
| Oct. ..    | 92  | 123  | 151  | 182    | 212 | 243  | 273   | 304 | 335   | 365  | 31   | 61   |
| Nov. .     | 61  | 92   | 120  | 151    | 181 | 212  | 242   | 273 | 304   | 334  | 365  | 30   |
| Dec. .     | 31  | 62   | 90   | 121    | 151 | 182  | 212   | 243 | 274   | 304  | 335  | 365  |

**Explanation.**—To find the number of days from January 20 to Dec. 20 follow the horizontal line opposite January until you reach the column headed by December, when you will find 334, representing the required number of days, and so on with the other months. During leap year, if February enters into the calculation, add one day to the result.

### **Laws of Grace on Sight Drafts**

Grace on sight drafts is allowed in the following States:

|               |                |                |
|---------------|----------------|----------------|
| Alabama       | New Mexico     | Rhode Island   |
| Arkansas      | North Carolina | South Carolina |
| Maine         | Oklahoma       | South Dakota   |
| Massachusetts | Oregon         | Texas          |
| Mississippi   |                |                |

Grace on sight drafts is not allowed in the following States:

|                |               |               |
|----------------|---------------|---------------|
| Arizona        | Kansas        | North Dakota  |
| California     | Kentucky      | Ohio          |
| Colorado       | Louisiana     | Pennsylvania  |
| Connecticut    | Michigan      | Tennessee     |
| Delaware       | Minnesota     | Utah          |
| Dist. Columbia | Maryland      | Vermont       |
| Florida        | Montana       | Virginia      |
| Georgia        | Nebraska      | Washington    |
| Idaho          | Nevada        | West Virginia |
| Illinois       | New Hampshire | Wisconsin     |
| Indiana        | New Jersey    | Wyoming       |
| Iowa           | New York      |               |

### Wood Measure

To find the contents of cord wood. Multiply the length, width, and height together and divide the product by 128.

How many cords in a pile of wood 4 feet wide, 5 feet high, and 24 feet long?

$$4 \times 5 \times 24 = 480 \text{ (cubic feet)} \div 128 = 3\frac{3}{4} \text{ cords.}$$

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### Circles and Globes

To find the circumference of a circle: Multiply the diameter by 3.1416.

To find the area of a circle: Multiply the square of the diameter by .7854.

To find the surface of a globe: Multiply the square of the diameter by 3.1416.

To find the solidity of a globe: Multiply the cube of the diameter by .5236.

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### Wedding Anniversaries

First anniversary, iron; fifth, wooden; tenth, tin; fifteenth, crystal; twentieth, china; twenty-fifth, silver; thirtieth, cotton; thirty-fifth, linen; fortieth, woolen; forty-fifth, silk; fiftieth, gold; seventy-fifth, diamond.

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### The Child's Prophecy

There are some lines which are known universally throughout America as the prophecy for one's life, counting from the day of his birth. One set runs:

Monday's child is fair of face;

Tuesday's child is full of grace;

Wednesday's child is merry and glad;

Thursday's child is sorry and sad;

Friday's child is loving and giving;

Saturday's child must work for his living;

Sunday's child is blithe, bonny, good and gay.

Another set goes:

Monday for health,

Tuesday for wealth,

Wednesday the best day of all;

Thursday for crosses,

Friday for losses,

Saturday no luck at all.



### **The Famous Connecticut Blue Laws**

These laws, enacted by the people of the "Dominion of New Haven," became known as the blue laws because they were printed on blue paper. They were as follows:

The governor and magistrates convened in general assembly are the supreme power, under God, of the independent dominion. From the determination of the assembly no appeal shall be made.

No one shall be a freeman or have a vote unless he is converted and a member of one of the churches allowed in the dominion.

Each freeman shall swear by the blessed God to bear true allegiance to this dominion and that Jesus is the only king.

No dissenter from the essential worship of this dominion shall be allowed to give a vote for electing of magistrates or any officer.

No food or lodging shall be offered to a heretic.

No one shall cross a river on the Sabbath but authorized clergymen.

No one shall travel, cook victuals, make beds, sweep houses, cut hair or shave on the Sabbath Day.

No one shall kiss his or her children on the Sabbath or fasting days.

The Sabbath Day shall begin at sunset Saturday.

Whoever wears clothes trimmed with gold, silver or bone lace above one shilling per yard shall be presented by the grand jurors and the selectmen shall tax the estate £300.

Whoever brings cards or dice into the dominion shall pay a fine of £5.

No one shall eat mince pies, dance, play cards or play any instrument of music except the drum, trumpet or jewsharp.

No gospel minister shall join people in marriage. The magistrate may join them, as he may do it with less scandal to Christ's church.

When parents refuse their children convenient marriages, the magistrate shall determine the point.

A man who strikes his wife shall be fined £10.

A woman who strikes her husband shall be punished as the law directs.

No man shall court a maid in person or by letter without obtaining the consent of her parents; £5 penalty for the first offense; £10 for the second, and for the third imprisonment during the pleasure of the court.

### **Durability of Different Woods**

Experiments have been lately made by driving sticks, made of different woods, each 2 feet long and  $1\frac{1}{2}$  inches square, into the ground, only one-half an inch projecting outward. It was found that in five years, all those made of oak, elm, ash, fir, soft mahogany, and nearly every variety of pine, were totally rotten. Larch, hard pine, and teak wood were decayed on the outside only; while acacia, with the exception of being also slightly attacked on the exterior, was otherwise sound. Hard mahogany and cedar of Lebanon were in tolerably good condition, but only Virginia cedar was found as good as when put in the ground. This is of some importance to builders, showing what woods should be avoided, and what others used by preference in underground work.

The duration of wood, when kept dry, is very great, as beams still exist which are known to be nearly 1,100 years old. Piles driven by the Romans prior to the Christian era, have been examined of late, and found to be perfectly sound after an immersion of nearly 2,000 years.

The wood of some tools will last longer than the metals, as in spades, hoes, and plows. In other tools the wood is first gone, as in wagons, wheelbarrows, and machines. Such wood should be painted or oiled; the paint not only looks well, but preserves the wood; petroleum oil is as good as any other.

Hard wood stumps decay in five or six years; spruce stumps decay in about the same time; hemlock stumps in eight to nine years; cedar eight to nine years; some stumps, never.

# **Principal Countries of the World—Population, Area, Etc.**

| Countries.                                  | Popu-<br>lation. | Square<br>Miles. | Capitals.      |
|---------------------------------------------|------------------|------------------|----------------|
| United States and Possessions (1917) .....  | 113,335,336      | 3,743,602        | Washington     |
| Argentina .....                             | 8,574,000        | 1,139,196        | Buenos Aires   |
| Austria (former)..                          | 29,193,293       | 115,882          | Vienna         |
| Belgium and Belgian Congo ....              | 22,571,387       | 911,373          | Brussels       |
| Bolivia .....                               | 2,520,538        | 708,195          | La Paz         |
| Brazil .....                                | 24,618,429       | 3,292,000        | Rio de Janeiro |
| British Empire...                           | 437,847,432      | 13,153,712       | London         |
| Chile .....                                 | 5,000,000        | 292,100          | Santiago       |
| China .....                                 | 320,620,000      | 1,861,000        | Peking         |
| Colombia .....                              | 5,472,604        | 435,278          | Bogota         |
| Cuba .....                                  | 2,406,117        | 44,164           | Havana         |
| Denmark and Possessions .....               | 3,037,990        | 15,388           | Copenhagen     |
| Dominican Republic .....                    | 710,000          | 19,325           | San Domingo    |
| Ecuador .....                               | 1,500,000        | 116,000          | Quito          |
| Egypt and the Soudan .....                  | 15,170,000       | 1,384,520        | Cairo          |
| France and Possessions .....                | 87,429,090       | 4,983,086        | Paris          |
| German Empire (former) and Possessions .... | 81,758,200       | 1,236,600        | Berlin         |
| Greece .....                                | 4,821,300        | 46,522           | Athens         |
| Hungary (former)                            | 20,886,487       | 125,609          | .....          |
| Italy and Possessions .....                 | 38,346,437       | 706,623          | Rome           |
| Japan and Possessions .....                 | 76,971,176       | 258,266          | Tokio          |
| Mexico .....                                | 15,160,369       | 767,097          | City of Mexico |
| Netherlands (Holland) and Possessions ..... | 43,310,646       | 771,077          | Amsterdam      |
| Norway .....                                | 2,391,782        | 124,129          | Christiania    |
| Paraguay .....                              | 800,000          | 97,722           | Asuncion       |
| Persia .....                                | 9,000,000        | 628,000          | Teheran        |
| Peru .....                                  | 4,500,000        | 683,321          | Lima           |
| Poland .....                                | 12,247,600       | 49,018           | Warsaw         |
| Portugal and Possessions .....              | 15,207,985       | 867,757          | Lisbon         |
| Russia.....                                 | 182,182,600      | 8,657,882        | Petrograd      |
| Siberia .....                               | 10,377,900       | 4,831,882        | .....          |
| Spain and Possessions .....                 | 21,742,249       | 280,611          | Madrid         |
| Sweden .....                                | 5,757,566        | 172,876          | Stockholm      |
| Switzerland .....                           | 3,880,500        | 15,976           | Berne          |
| Turkish Empire..                            | 21,274,000       | 710,224          | Const'ntinople |
| United Kingdom..                            | 33,711,000       | .....            | .....          |
| Uruguay .....                               | 1,225,914        | 72,172           | Montevideo     |
| Venezuela .....                             | 2,811,046        | 393,976          | Caracas        |

### Facts About Railways

It is claimed that the fastest time on record was made over the Philadelphia and Reading Railroad. The time was ninety-two miles in ninety-three minutes, one mile being made in forty-six seconds.

The chances for loss of life in railroad accidents in the country are one person killed for every 10,000,000 carried. Statisticians claim that more people are killed every year by falling out of windows than there are in railroad accidents.

The cantilever span in the Poughkeepsie bridge is the longest railway bridge span in the United States. Its length is 548 feet.

The Kinzu viaduct, on the Erie Railroad, is the highest railroad bridge in the United States. It is 305 feet high.

The longest railway tunnel in America is the Hoosac tunnel; Boston & Maine Railroad. It is four and three-fourths miles long.

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### What a Lemon Will Do

Lemonade made from the juice of the lemon is one of the best and safest drinks for any person, whether in health or not. It is suitable for all stomach diseases, excellent in sickness, in cases of jaundice, gravel, liver complaint, inflammation of the bowels, and fevers. It is a specific against worms and skin complaints. The pippin crushed may be used with sugar and water and taken as a drink. Lemon juice is the best antiscorbutic remedy known. It not only cures the disease, but prevents it. Sailors make daily use of it for this purpose. We advise every one to rub their gums with lemon juice to keep them in a healthy condition. The hands and nails are also kept clean, white, soft and supple by the daily use of lemon instead of soap. It also prevents chilblains. Lemon is used in intermittent fevers, mixed with strong, hot, black coffee, without sugar. Neuralgia, it is said, may be cured by rubbing the part affected with a cut lemon. It is valuable also to cure warts. It will remove dandruff by rubbing the roots of



the hair with it. It will alleviate, and finally cure, coughs and colds, and heal diseased lungs, if taken hot on going to bed at night. Its uses are manifold, and the more we employ it internally the better we shall find ourselves. A doctor in Rome is trying it experimentally in malarial fevers with great success.

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### **Excessive Heat in the Past**

In 1303 and 1304 the Rhine, Loire and Seine ran dry. The heat in several French provinces during the summer of 1705 was equal to that of a glass furnace. Meat could be cooked by merely exposing it to the sun. Not a soul dare venture out between noon and 4 p. m. In 1718 many shops had to close. The theaters never opened their doors for three months. Not a drop of water fell during six months. In 1773 the thermometer rose to 118 degrees. In 1778 the heat of Bologna was so intense that a great number of people were stifled. There was not sufficient air for the breath and people had to take refuge under the ground. In July, 1793, the heat again became intolerable. Vegetables were burned up and fruit dried on the trees. The furniture and woodwork in dwelling houses cracked and split up; meat went bad in an hour.

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### **A Figure Puzzle**

Open a book at random and select a word within the first ten lines, and within the tenth word from the end of the line. Mark the word. Now double the number of the page and multiply the sum by 5.

Then add 20.

Then add the number of the line you have selected.

Then add 5.

Multiply the sum by 10.

Add the number of the word in the line. From this sum subtract 250, and the remainder will indicate in the unit column the number of the word; in the ten column the number of the line, and the remaining figures the number of the page.

### **A Popular Fiction About Steel**

Many people imagine that by blowing their breath on the blade of a knife they can tell whether the blade is steel or pot-metal. Now, a person's breath will adhere to a pot-metal blade and fade away the same as on steel, but nine out of ten men don't know this, and that is the reason why so many people carry inferior pocket-knives.

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### **Sailing Around the World—How Days Are “Lost” and “Picked Up”**

There are 360 degrees of longitude in the entire circle of the earth. As the world rotates on its axis in 24 hours,  $1/24$  of 360 degrees, which equals 15 degrees, corresponds to a difference of one hour in time. Now, imagine a ship sailing from New York eastward. When it has reached a point 15 degrees east of New York, the sun will come to the noon line (or meridian) one hour sooner than at New York. When it has reached to 30 degrees of longitude east of New York, it will be noon on shipboard two hours earlier than at New York, and so on, until when it is 180 degrees east of that city, when it will be noon on shipboard twelve hours earlier than at New York. Now, imagine another ship sailing westward. It is easy to comprehend that for every 15 degrees in that direction there will be a difference of one hour later in the time of the sun's coming to the noon line, and at 180 west of New York it will not be noon on the ship until twelve hours after it was noon in New York. If the two ships meet at this point, the one will have gained twelve hours and the other will have lost twelve hours, and if there were no rule of navigation to regulate their calendars, one crew would insist on calling the time noon of one day, while the other would insist that it was noon of the day before or day after. The rule of the calendar-makers and all navigators is to drop out a day for the lost day when a ship crosses the 180 degrees of longitude sailing westward (that is, the 180th degree from

Greenwich, near London), and to add a day to the week, or double the day on which they reach the same degree in sailing eastward. For example, when a ship reaches the 180th degree sailing eastward on Wednesday it calls both that day and the next day Wednesday. When a ship comes to this same meridian, sailing westward on Wednesday, instead of calling it Wednesday they call it Thursday. The one ship's crew has two Wednesdays together in the same week, and the other ship's crew has a week without any Wednesday in it. The sailors say that the Wednesday the one ship "lost" the other "picked up."

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### **The Greatest of Valleys**

The Valley of the Amazon is larger than that of the Mississippi, the former river draining 2,330,000 square miles, the Mississippi 1,244,600 square miles. The Amazon drains a greater area than any other river on the globe.

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### **Silk Stockings**

Silk stockings were first worn by Henry II. of France, 1547. Howell says, in 1560, Queen Elizabeth was presented with a pair of black knit silk stockings by her silk-woman, Mrs. Montague, and she never wore cloth ones any more. He adds, that Henry VIII., that magnificent and experienced prince, wore ordinary cloth hose, except there came from Spain, by great chance, a pair of silk stockings; for Spain very early abounded in silk. His son, Edward VI., was presented with a pair of Spanish silk stockings by his merchant, Sir Thomas Graham, and the present was then much taken notice of; consequently the invention of knit silk stockings came from Spain. Others relate that William Rider, a London apprentice, seeing at the house of an Italian merchant, a pair of knit worsted stockings from Mantua, from thence ingeniously made a pair like them, which he presented to the Earl of Pembroke, and were the first of the kind made in England, 1564.

## Interest Laws and Statutes of Limitations

| State                | INTEREST<br>RATE. |                                   |                 | STATUTES OF<br>LIMITATIONS. |                |  |
|----------------------|-------------------|-----------------------------------|-----------------|-----------------------------|----------------|--|
|                      | Legal<br>Rate     | Rate al-<br>lowed by<br>contract. | Judg-<br>ments. | Notes.                      | Open<br>Accts. |  |
|                      | Per<br>cent.      | Per<br>cent.                      | Yrs.            | Yrs.                        | Yrs.           |  |
| Alabama .....        | 8                 | 8                                 | 20              | 6                           | 3              |  |
| Arkansas .....       | 6                 | 10                                | 10              | 5                           | 3              |  |
| Arizona .....        | 6                 | 12                                | 5               | 4                           | 3              |  |
| California .....     | 7                 | Any rate                          | 5               | 4                           | 4              |  |
| Colorado .....       | 8                 | Any rate                          | 20              | 6                           | 6              |  |
| Connecticut .....    | 6                 | 6                                 | ..              | ..                          | 6              |  |
| Delaware .....       | 6                 | 6                                 | 10              | 6                           | 3              |  |
| Dist. of Col.....    | 6                 | 10                                | 12              | 3                           | 3              |  |
| Florida .....        | 8                 | 10                                | 20              | 5                           | 2              |  |
| Georgia .....        | 7                 | 8                                 | 7               | 6                           | 4              |  |
| Idaho .....          | 7                 | 12                                | 6               | 5                           | 4              |  |
| Illinois .....       | 5                 | 7                                 | 20              | 10                          | 5              |  |
| Indiana .....        | 6                 | 8                                 | 20              | 10                          | 6              |  |
| Iowa .....           | 6                 | 8                                 | 20              | 10                          | 5              |  |
| Kansas .....         | 6                 | 10                                | 5               | 5                           | 3              |  |
| Kentucky .....       | 6                 | 6                                 | 15              | 15                          | 5              |  |
| Louisiana .....      | 5                 | 8                                 | 10              | 5                           | 3              |  |
| Maine .....          | 6                 | Any rate                          | 20              | 6                           | 6              |  |
| Maryland .....       | 6                 | 6                                 | 12              | 3                           | 3              |  |
| Massachusetts .....  | 6                 | Any rate                          | 20              | 6                           | 6              |  |
| Michigan .....       | 5                 | 7                                 | 10              | 6                           | 6              |  |
| Minnesota .....      | 7                 | 10                                | 10              | 6                           | 6              |  |
| Mississippi .....    | 6                 | 8                                 | 7               | 6                           | 3              |  |
| Missouri .....       | 6                 | 8                                 | 10              | 10                          | 5              |  |
| Montana .....        | 8                 | Any rate                          | 10              | 8                           | 5              |  |
| Nebraska .....       | 7                 | 10                                | 5               | 5                           | 4              |  |
| Nevada .....         | 7                 | Any rate                          | 6               | 4                           | 4              |  |
| New Hampshire.....   | 6                 | 6                                 | 20              | 6                           | 6              |  |
| New Jersey .....     | 6                 | 6                                 | 20              | 6                           | 6              |  |
| New Mexico .....     | 6                 | 12                                | 7               | 6                           | 4              |  |
| New York .....       | 6                 | 6                                 | 20              | 6                           | 6              |  |
| North Carolina ..... | 6                 | 6                                 | 10              | 3                           | 3              |  |
| North Dakota .....   | 7                 | 12                                | 10              | 6                           | 6              |  |
| Ohio .....           | 6                 | 8                                 | 15              | 15                          | 6              |  |



## Interest and Limitation Laws—Continued

| State                | INTEREST<br>RATE. |                                   | STATUTES OF<br>LIMITATIONS. |        |                |
|----------------------|-------------------|-----------------------------------|-----------------------------|--------|----------------|
|                      | Legal<br>Rate     | Rate al-<br>lowed by<br>contract. | Judg-<br>ments.             | Notes. | Open<br>Accts. |
|                      | Per<br>cent.      | Per<br>cent.                      | Yrs.                        | Yrs.   | Yrs.           |
| Oklahoma .....       | 6                 | 10                                | 5                           | 5      | 3              |
| Oregon .....         | 6                 | 10                                | 10                          | 6      | 6              |
| Pennsylvania .....   | 6                 | 6                                 | 5                           | 6      | 6              |
| Rhode Island .....   | 6                 | Any rate                          | 20                          | 6      | 6              |
| South Carolina ..... | 7                 | 8                                 | 10                          | 6      | 6              |
| South Dakota .....   | 7                 | 12                                | 20                          | 6      | 6              |
| Tennessee .....      | 6                 | 6                                 | 10                          | 6      | 6              |
| Texas .....          | 6                 | 10                                | 10                          | 4      | 2              |
| Utah .....           | 8                 | 12                                | 8                           | 6      | 4              |
| Vermont .....        | 6                 | 6                                 | 8                           | 6      | 6              |
| Virginia .....       | 6                 | 6                                 | 20                          | 5      | 2              |
| Washington .....     | 6                 | 12                                | 6                           | 6      | 3              |
| West Virginia .....  | 6                 | 6                                 | 10                          | 10     | 5              |
| Wisconsin .....      | 6                 | 10                                | 20                          | 6      | 6              |
| Wyoming .....        | 8                 | 12                                | 21                          | 5      | 8              |

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**“Uncle Tom’s Cabin”**

The author of “Uncle Tom’s Cabin,” Harriet Beecher Stowe, was born in Litchfield, Conn. At the age of 15 she became a teacher in a girls’ school at Hartford, and in 1836 became the wife of Prof. Calvin E. Stowe, of the Andover Theological Seminary, and became a contributor to the periodicals of the day. But her literary powers were scarcely appreciated until 1851, when she commenced in the *National Era* of Washington the publication of “Uncle Tom’s Cabin.” When finished, in 1852, it was republished in Boston in book form, and its popularity was so immediate that it soon sold in four stereotype editions to the extent of 400,000 copies. The English reprint had a circulation of 500,000, and the book was translated into twenty European and Asiatic languages.

### The Metric System

*A Language of ten words.*—The metric system is a universal language of measure. It is a language of 10 words, as shown in the table following:

THE TEN METRIC TERMS.

| Name.  | Value. | Meaning.                 | Pro-nounced. | Abbrevia-tion. |
|--------|--------|--------------------------|--------------|----------------|
| Meter  | 1.     | "the unit of length"     | meeter       | m              |
| Liter  | 1.     | "the unit of volume"     | leeter       | l              |
| Gram   | 1.     | "the unit of weight"     | gram         | g              |
| Are    | 1.     | "the unit of area"       | air          | a              |
| Milli- | .001   | "the thousandth part of" | milly        | m-             |
| Centi- | .01    | "the hundredth part of"  | senti        | c-             |
| Deci-  | .1     | "the tenth part of"      | dessy        | d-             |
| Deka-  | 10.    | "ten times"              | decka        | dk-            |
| Hecto- | 100.   | "one hundred times"      | heckto       | h-             |
| Kilo-  | 1000.  | "one thousand times"     | killo        | k-             |

**FAMILIAR TERMS.**—Of these 10 words 7 are well known. "*Mill*" (.001) is our smallest unit of money, being 1 thousandth part of a dollar. "*Cent*" (.01) is our smallest coin, meaning one hundredth part. Correspondingly, "*deci*" (.1) is part of "decimal" meaning "tenth." "*Deka*-" (10) is found in "decade." "*Hecto*-" (100) occurs in "hectograph," meaning "100 writings." Again, "meter," meaning "measure," is in common use, and "*are*" is part of the word "area." The remaining three words, *liter*, *gram* and *kilo*, are easily remembered.

**A SELF-EXPLANATORY SYSTEM.**—When the meaning of these 10 words is known, the whole metric system is learned. The design of the system makes it self-explanatory. The tables of derived units form themselves automatically. No tables need be or should be memorized.

Smaller and larger units are named by combining the proper numeral prefix with the name of the basic unit. The new term is self-defining—for example, "centi-meter." Here "centi" means "the one-hundredth part of," and "meter" means the "unit of length," so that "centimeter" expresses precisely its meaning, "the one-hundredth part of the unit of length." Every other metric term is as easily formed and expresses as clearly its own definite meaning.

EQUIVALENT IN INCHES, etc.—One inch equals 25.4001 millimeters. One meter equals 39.37 inches. One yard equals 3600-3937 of a meter. One foot equals 1200-3937 of a meter. One mile equals 1.6093 kilometers. One nautical mile equals 1.8532 kilometers. One acre equals 0.40469 hectares. One liquid quart equals 0.9463 liters. One gallon equals 3.7853 liters. One pound equals 0.45359 kilograms. One bushel equals 0.35238 hectoliters.

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### Story of the Metric System

When commerce spread, the chaos of units in trading countries became intolerable. A world system was desired alike in science and commerce. An ideal system must be practical and scientific, adapted to measure anything and suited to all people, for all purposes, and for all time. Men of affairs urged that such a system be devised. The vision was realized in the metric system, now the legal standard in 34 countries and in use for scientific purposes throughout the world.

Many features desirable in a world system had been separately suggested prior to the actual proposal in the French National Assembly which resulted in the metric system. Decimals, introduced into Europe by Stevenius, became part of the new system. Self-defining names were suggested by Abbe Mouton, and improved as now found in the system. James Watt suggested that all units of weight and measure be derived from the single unit of length. This was made a basic principle of the metric system. Several had also proposed that this unit of length be taken from an invariable dimension found in nature. In fixing the metric unit of length, it was decided to make the "meter" equal to one ten-millionth of the quadrant of the earth.

When the plan was approved, the development of the details of the system was begun. Surveyors measured an arc of the meridian passing through Dunkirk as a basis for fixing the

length of the meter. Scientists in their laboratories derived precisely the units of volume and of weight from the unit of length. Chemists purified the platinum. Mechanics perfected form and finish of the standards of length and mass—the meter and kilogram.

The system spread rapidly from nation to nation. The need for international custody of the standards and an international bureau was realized, and in 1875 the leading nations signed the treaty of Paris establishing the International Bureau of Weights and Measures, providing for new standards of the meter and kilogram and for their international custody. The treaty resulted from a series of international conferences in Paris, beginning in 1870, interrupted by the Franco-Prussian War, resumed in 1872, and completed in 1875. The treaty realized the suggestion of John Quincy Adams made years before that a council of nations be called to fix a single invariable and international system for all peoples and all times. The results of the treaty assured the permanency and final success of the metric system, which is now the legal standard in 34 nations and the world standard for all the sciences.

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### **How to Measure the Width of a River**

The approximate breadth of a river or other stream may be determined by means of the brim of a hat. The person desiring to ascertain this fact must place himself at the edge of one bank of the river and lower the brim of his hat till he finds the edge just cuts the other bank; then, after placing the hand under the chin so as to steady his head and keep it in exactly the same position, he must turn around steadily till he faces some level ground on his own side of the river and observe when the edge of the peak again meets the ground. The measure of this distance will be the breadth of the river.



## POPULAR NAMES, FLOWERS AND MOTTOES OF THE STATES

| State.            | Popular Name.              | Flower.          | Motto.                                                                                                                                                           |
|-------------------|----------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alabama           | .....Cotton state.....     | Goldenrod        | Here We Rest.                                                                                                                                                    |
| Arizona           | .....Saguaro cactus.....   | Sequoia          | Ditat Deus (God Enriches).                                                                                                                                       |
| Arkansas          | .....Bear state.....       | Apple blossom    | Regnant Populi (The People Rule).                                                                                                                                |
| California        | .....Golden state.....     | Poppy            | Eureka (I Have Found It).                                                                                                                                        |
| Colorado          | .....Centennial state..... | Columbine        | Nil Nisi Numine (Nothing Without God).                                                                                                                           |
| Connecticut       | .....Nutmeg state.....     | Mountain laurel  | Qui Transtulit Sustinet (He Who Transplanted Still Sustains).                                                                                                    |
| Delaware          | .....Blue Hen state.....   | Peach blossom    | Liberty and Independence.                                                                                                                                        |
| Dist. of Columbia | .....                      | Justice Omnibus  | (Justice to All).                                                                                                                                                |
| Florida           | .....Peninsula state.....  | In God We Trust. |                                                                                                                                                                  |
| Georgia           | .....Cracker state.....    | Cherokee rose    | Wisdom, Justice, Moderation.                                                                                                                                     |
| Idaho             | .....Sucker state.....     | Syringa          | Esto Perpetua (May It Be Perpetual).                                                                                                                             |
| Illinois          | .....Hoosier state.....    | Violet           | State Sovereignty, National Union.                                                                                                                               |
| Indiana           | .....Hawkeye state.....    | Wild rose        | Our Liberties We Prize, and Our Rights We Will Maintain.                                                                                                         |
| Iowa              | .....                      |                  |                                                                                                                                                                  |
| Kansas            | .....Sunflower state.....  | Sunflower        | Ad Astra per Aspera (To the Stars Through Difficulties).                                                                                                         |
| Kentucky          | .....Blue Grass state..... | Blue grass       | United We Stand, Divided We Fall.                                                                                                                                |
| Louisiana         | .....Pelican state.....    | Magnolia         | Union, Justice and Confidence.                                                                                                                                   |
| Maine             | .....Pine Tree state.....  | Pine cone        | Dirigo (I Direct).                                                                                                                                               |
| Maryland          | .....Old Line state.....   |                  | Fatti Maschii, Parole Femine (Manly Deeds and Womanly Words). Scuto Bonae Voluntatis Tuae Coronasti Nos (With the Shield of Thy Good-Will Thou Hast Covered Us). |

| State          | Popular Name      | Flower             | Motto                                                                                              |
|----------------|-------------------|--------------------|----------------------------------------------------------------------------------------------------|
| Massachusetts  | Bay state         |                    | Ense Petit Placidam sub Libertate Quietem<br>(With the Sword She Seeks Quiet Peace Under Liberty). |
| Michigan       | Wolverine state   | Apple blossom      | Si Quaeris Peninsulam Amoenam Circumspice (If Thou Seekest a Beautiful Peninsula, Behold It Here). |
| Minnesota      | Gopher state      | Moccasin           | L'etoile du Nord (The Star of the North).                                                          |
| Mississippi    | Bayou state       | Magnolia           | Salus Populi Suprema Lex Esto (The Welfare of the People Is the Supreme Law).                      |
| Missouri       |                   | Goldenrod          | Oro y Plata (Gold and Silver).                                                                     |
| Montana        | Stub Toe state    | Bitter root        | Equality Before the Law.                                                                           |
| Nebraska       |                   | Goldenrod          | All for Our Country.                                                                               |
| Nevada         | Silver state      |                    | Liberty and Prosperity.                                                                            |
| N. Hampshire   | Granite state     |                    | Crescit Eundo (It Increases by Going).                                                             |
| New Jersey     | Blue state        | Sugar maple (tree) | Excelsior (Higher, More Elevated).                                                                 |
| New Mexico     |                   |                    | Esse Quam Videri (To Be Rather Than to Seem).                                                      |
| New York       | Empire state      | Rose               | Liberty and Union, One and Inseparable, Now and Forever.                                           |
| North Carolina | Old North state   |                    | Imperium in Imperio (A Government Within a Government).                                            |
| North Dakota   | Flickertail state | Goldenrod          | The Union.                                                                                         |
| Ohio           |                   |                    | Virtue, Liberty and Independence.                                                                  |
| Oklahoma       | Buckeye state     |                    | Hope.                                                                                              |
|                | Mistletoe         |                    | Dum Spiro, Spero (While I Breathe I Hope).                                                         |
| Oregon         |                   | Oregon grape       |                                                                                                    |
| Pennsylvania   | Beaver state      |                    |                                                                                                    |
| Rhode Island   | Keystone state    | Violet             |                                                                                                    |
| South Carolina | Little Rhody      | Pasqueflower       |                                                                                                    |

|                  |                               |                                                                  |                                                           |
|------------------|-------------------------------|------------------------------------------------------------------|-----------------------------------------------------------|
| South Dakota ... | Sunshine state...             | Palmetto state...<br>(anemone patens)<br>with motto "I<br>Lead." | Under God the People Rule.<br>Agriculture, Commerce.      |
| Tennessee .....  | Big Bend state.               |                                                                  |                                                           |
| Texas .....      | Lone Star state.              | Bluebonnet .....                                                 |                                                           |
| Utah .....       | Sego lily.....                |                                                                  |                                                           |
| Vermont .....    | Green Mountain<br>state ..... | Red clover.....                                                  | Freedom and Unity.                                        |
| Virginia .....   | The Old Domin-<br>ion .....   |                                                                  | Sic Semper Tyrannis (Thus Always to Ty-<br>rants).        |
| Washington ..... | Evergreen state.              | Rhododendron ....                                                | Al-ki (By and By).                                        |
| West Virginia... | The Panhandle..               | Rhododendron ....                                                | Montani Semper Liberi (Mountaineers Al-<br>ways Freemen). |
| Wisconsin .....  | Badger state....              | Violet .....                                                     | Forward.                                                  |
| Wyoming .....    |                               |                                                                  | Cedant Arma Togae (Let Arms Yield to the<br>Gown).        |

### GROWTH OF THE UNITED STATES, 1800-1918

#### OFFICIAL FIGURES FROM DEPARTMENT OF COMMERCE.

|                          | 1800      | 1850          | 1880           | 1900           | 1918            |
|--------------------------|-----------|---------------|----------------|----------------|-----------------|
| Area (sq. mi.).....      | 892,135   | 2,997,119     | 3,026,789      | 3,026,788      | 3,026,789       |
| Population .....         | 5,308,483 | 23,191,876    | 50,155,783     | 75,994,575     | 105,118,467     |
| Population per sq. mi... | 6.47      | 7.88          | 16.86          | 25.55          | 35.35           |
| Wealth (dols.) .....     |           | 7,135,780,000 | 42,642,000,000 | 88,517,306,775 | 187,739,071,000 |

|                                                    | 1800       | 1850          | 1880           | 1890           | 1918           |
|----------------------------------------------------|------------|---------------|----------------|----------------|----------------|
| Public debt, less cash in Treasury (dols.) .....   | 82,976,294 | 63,452,774    | 1,919,326,748  | 1,107,711,258  | *1,908,635,223 |
| Total circulation of money (dols.) .....           | 26,500,000 | 278,761,982   | 973,382,228    | 2,055,150,998  | 5,384,797,909  |
| National banks (no.) .....                         |            |               | 2,076          | 3,732          | 7,688          |
| Capital (dols.) .....                              |            |               | 455,909,565    | 621,536,461    | 1,096,932,000  |
| Deposits in National banks (dols.) .....           |            |               | 833,701,034    | 2,458,092,758  | 10,437,433,000 |
| Deposits in savings banks .....                    |            | 43,431,130    | 819,106,973    | 2,389,719,954  | 5,418,022,275  |
| Farms and farm property (dols.) .....              |            | 3,967,343,580 | 12,180,501,538 | 20,439,901,164 | 40,991,449,090 |
| Farm products value (dols.) .....                  |            |               | 2,212,450,927  | 4,417,069,973  | 19,433,849,000 |
| Manufacturing establishments (number) ....         |            | 123,025       | 253,852        | 207,514        | 275,791        |
| Value of products (dols.) .....                    |            |               |                |                |                |
| U. S. Govt. receipts—net ordinary (dols.) .....    |            | 1,019,106,616 | 5,369,579,191  | 11,406,926,701 | 24,246,434,724 |
| U. S. Gov. disbursements, net ordinary (dols.) ... | 10,848,749 | 43,592,889    | 333,526,501    | 567,240,852    | 3,658,546,510  |
| War (dols.) .....                                  | 10,813,974 | 40,948,383    | 264,847,637    | 487,713,792    | 7,874,386,325  |
| Navy (dols.) .....                                 | 2,560,879  | 9,687,025     | 38,116,916     | 134,774,768    | *440,276,880   |
| Pensions (dols.) ....                              | 3,448,716  | 7,904,725     | 13,536,985     | 55,953,078     | *257,166,437   |
| Imports of merchandise (dols.) ....                | 64,131     | 1,866,886     | 56,777,174     | 140,877,316    | *160,318,406   |
| Exports of merchandise (dols.) .....               | 91,252,768 | 173,509,526   | 667,954,746    | 849,941,184    | 2,946,059,403  |
| Production of gold (dols.) .....                   | 70,971,780 | 144,375,726   | 835,638,658    | 1,394,483,082  | 5,928,285,641  |
|                                                    |            | 50,000,000    | 36,000,000     | 79,171,000     | 84,456,600     |



| Silver, commercial value        | 1800    | 1850        | 1880          | 1890          | 1918          |
|---------------------------------|---------|-------------|---------------|---------------|---------------|
| (dols.) .....                   |         | 50,900      | 34,717,000    | 35,741,100    | 61,139,606    |
| Coal (long tons) ..             |         | 6,266,233   | 63,822,830    | 240,789,310   | 575,000,000   |
| Pig iron (tons) .....           |         | 563,755     | 3,835,191     | 13,789,242    | 39,434,797    |
| Steel (tons) .....              |         |             | 1,247,335     | 10,188,329    | 42,773,680    |
| Wheat (bushels) ..              |         |             | 498,549,868   | 522,229,505   | 650,828,000   |
| Corn (bushels) .....            |         | 100,485,944 | 1,717,434,543 | 2,105,102,516 | 3,159,494,000 |
| Cotton (bales) ....             | 153,509 | 592,071,104 | 6,605,750     | 10,102,102    | 11,231,263    |
| Railways operated (mi.) .....   |         | 2,454,442   | 93,267        | 194,262       | 266,031       |
| Passengers carried (no.) .....  |         | 9,021       |               | 576,831,251   | 1,005,683,174 |
| American vessels built          |         |             |               |               |               |
| (tons) .....                    | 106,261 | 279,255     | 157,409       | 393,790       | 325,413       |
| Trading, domestic,              |         |             |               |               |               |
| etc. (tons) .....               | 301,919 | 1,949,743   | 2,715,224     | 4,338,145     | 6,277,934     |
| Trading, foreign                |         |             |               |               |               |
| (tons) .....                    | 669,921 | 1,585,711   | 1,352,810     | 826,694       | 2,191,715     |
| On Great Lakes                  |         |             |               |               |               |
| (tons) .....                    |         | 198,266     | 605,102       | 1,565,587     | 2,760,815     |
| Commercial failures (no.) ..... |         |             | 4,735         | 10,774        | †5,889        |
| Amount of liabilities           |         |             |               |               |               |
| (dols.) .....                   |         |             | 65,752,000    | 138,495,673   | †87,793,562   |
| Post-Offices (no.) .....        | 903     | 18,417      | 42,989        | 76,688        | 54,345        |
| Receipts of Post-Office         |         |             |               |               |               |
| Department (dols.) ..           | 280,804 | 5,499,985   | 33,315,479    | 102,354,579   | *329,726,116  |
| Patents issued (no.) ....       |         | 933         | 13,947        | 26,499        | 40,526        |
| Immigrants arrived (no.) .....  |         | 369,980     | 457,257       | 448,572       | 110,618       |

\*1917

†First 6 mos.

**French Words and Phrases**

- A la mode*, according to the fashion.  
*Au fait*, well informed.  
*Au revoir*, farewell.  
*A votre santé*, to your health.  
*Beau idéal*, perfection.  
*Belles lettres*, elegant literature.  
*Bon ami*, a good friend.  
*Bonhomie*, goodness of heart joined to simplicity of character.  
*Bon vivant*, one fond of good living.  
*Canard*, lit., a duck; an idle fabrication.  
*Carte blanche*, lit., a blank sheet of paper; permission to anyone to act as he pleases.  
*Cul de sac*, lit., the bottom of a bag; a street or lane having no outlet at one end.  
*Denouement*, the issue; final event.  
*Eclat*, brilliancy.  
*Elite*, the best; most select.  
*En route*, on the way.  
*Entente cordiale*, a friendly feeling.  
*Entre nous*, between ourselves.  
*Faux pas*, a false step; an error.  
*Hors de combat*, disabled.  
*Jeu d'esprit*, a play of wit; a jest.  
*Mal de mer*, seasickness.  
*Mot a mot*, word for word.  
*Nom de plume*, pen-name.  
*On dit*, it is said; a current rumor.  
*Raconteur*, a narrator; teller of stories.  
*Raison d'être*, the reason of being.  
*Rechauffé*, lit., something reproduced.  
*Recherché*, elegant, attractive, refined.  
*Sang froid*, cold blood; apathy.  
*Sobriquet*, a nickname.  
*Tete-a-tete*, head to head; face to face.  
*Tout ensemble*, the whole.  
*Vis-a-vis*, face to face; opposite.
- 

**Latin Words and Phrases**

- Addendum* (plural, *addenda*), a thing added.  
*Ad infinitum*, to infinity.  
*Ad libitum*, at pleasure, without stint.

*Ad referendum*, for farther consideration.

*Ad valorem*, according to the value.

*A fortiori*, with stronger reason.

*Alias*, otherwise.

*Alter ego*, another self.

*Cum grano salis*, with a grain of salt; with some limitation.

*De facto*, from the fact.

*Desideratum* (plural, *desiderata*), a thing to be desired.

*Ecce Homo*, behold the man.

*Exempli gratia*, frequently written e. g. (for the sake of example).

*Ex officio*, by virtue of his office.

*Ex parte*, on one side only.

*Ex tempore*, without premeditation; on the spur of the moment.

*Habeas corpus*, you may have the body.

*Hic jacet*, here he lies.

*Id est*, frequently written i. e. (that is).

*In extenso*, in the full extent.

*In extremis*, in a dying state.

*In loco parentis*, in the place of a parent.

*In puris naturalibus*, in a natural state, naked.

*In re*, in the affair of.

*In statu quo*, in the same position.

*In tenebris*, in darkness.

*Inter alia*, among other things.

*Interim*, in the meanwhile.

*Lapsus linguae*, a slip of the tongue.

*Locum tenens*, holding the place.

*Modus operandi*, the manner of doing a thing.

*Multum in parvo*, much in little.

*Ne plus ultra*, literally, nothing more beyond; perfection.

*Nil desperandum*, despair of nothing.

*Nolens volens*, willing or unwilling.

*Obiter dictum*, a thing said by the way.

*Ora pro nobis*, pray for us.

*Prima facie*, on the first face; on the first view.

*Quid pro quo*, something for something.

*Rara avis*, a rare bird.

*Sine die*, without (appointing) a day.

*Sine qua non*, a thing indispensable.

*Tempus fugit*, time flies.

*Vade mecum*, go with me.

*Verbum sat sapienti*, a word to the wise is sufficient.

*Vice versa*, the terms being exchanged.

*Vox populi*, the voice of the people.

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### The World's Greatest Waterfalls

|                                    | Height<br>(feet) |
|------------------------------------|------------------|
| Gavarnie, France .....             | 1,385            |
| Grand, Labrador .....              | 2,000            |
| Minnehaha, Minnesota .....         | 50               |
| Missouri, Montana .....            | 90               |
| Montmorenci, Quebec .....          | 265              |
| Multnomah, Oregon .....            | 850              |
| Murchison, Africa .....            | 120              |
| Niagara, New York-Ontario.....     | 164              |
| Rjukan, Norway .....               | 780              |
| Schaffhausen, Switzerland.....     | 100              |
| Skjaeggedalsfos, Norway.....       | 530              |
| Shoshone, Idaho.....               | 210              |
| Staubbach, Switzerland.....        | 1,000            |
| Stirling, New Zealand.....         | 500              |
| Sutherland, New Zealand.....       | 1,904            |
| Takkakaw, British Columbia.....    | 1,200            |
| Twin, Idaho.....                   | 180              |
| Yellowstone (upper), Montana.....  | 110              |
| Yellowstone (lower), Montana.....  | 310              |
| Ygnassu, Brazil.....               | 210              |
| Yosemite (upper), California.....  | 1,436            |
| Yosemite (middle), California..... | 626              |
| Yosemite (lower), California.....  | 400              |
| Vettis, Norway .....               | 950              |
| Victoria, Africa.....              | 400              |
| Voringfos, Norway.....             | 600              |

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### U. S. Railroad Statistics

In 1917 there were 231,155 miles of railroads in operation in the United States, with freight revenues of \$2,829,246,769, and passenger revenues of \$825,496,365.



### U. S. Telegraph Statistics

In the year 1912 there were 1,814,196 miles of telegraph wire in use in the United States, carrying 103,536,418 messages, to and from 30,781 offices. This represented total assets of \$191,-516,700 and total income for the year of \$56,293,-469. Number of employes, 35,000. Salaries and wages, \$23,741,000. The four wireless telegraph systems reported 285,091 messages and a total income of about \$670,000.

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### U. S. Telephone Statistics

The Bell Telephone System reported for 1917 13,451,121 miles of underground wire in the United States, and 9,112,498 miles of aerial wire. Number of Bell stations, 7,031,531, and of connected stations, 3,444,148. Total assets, \$1,276,-503,468; total liabilities, \$963,758,674. Operating revenues, \$294,894,950. Employes, 192,364. Daily exchange connections, 30,845,153; daily toll connections, 1,009,205.

The Government's census figures for 1912 give the total for other systems in the United States as: Miles of wire, 5,115,140; instruments, 3,642,-565; messages, 4,602,431,409.

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### U. S. Express Companies

In 1917 the American Express Company had the largest revenue—\$42,099,273—but its net income was only \$679,184. Wells, Fargo & Co. was second in total revenues, with \$29,578,340 and a net of \$651,416. The Adams Express Company was third in gross income—\$27,653,700—but was the only company showing a deficit; furthermore, that deficit amounted to no less than \$3,-137,187.

On May 28, 1918, the four leading express companies—Adams, American, Wells-Fargo and Southern—were virtually taken over by the Government under the arrangement by which they were merged under federal control into the American Railway Express Company, under which contract they are still operating.

### States Ratifying Prohibition Amendment

The following States ratified the prohibition amendment to the U. S. Constitution in this order, up to Feb. 1, 1919. Nebraska, being the thirty-sixth, cast the deciding vote in favor of national prohibition, inasmuch as the Constitution requires the vote of three-fourths of the States to amend.

|                   |                    |
|-------------------|--------------------|
| 1. Mississippi    | 23. Tennessee      |
| 2. Virginia       | 24. California     |
| 3. Kentucky       | 25. Illinois       |
| 4. South Carolina | 26. Indiana        |
| 5. North Dakota   | 27. Arkansas       |
| 6. Maryland       | 28. North Carolina |
| 7. Montana        | 29. Alabama        |
| 8. Texas          | 30. Kansas         |
| 9. Delaware       | 31. Oregon         |
| 10. South Dakota  | 32. Iowa           |
| 11. Massachusetts | 33. Utah           |
| 12. Arizona       | 34. Colorado       |
| 13. Georgia       | 35. New Hampshire  |
| 14. Louisiana     | 36. Nebraska       |
| 15. Florida       | 37. Missouri       |
| 16. Michigan      | 38. Wyoming        |
| 17. Ohio          | 39. Wisconsin      |
| 18. Oklahoma      | 40. Minnesota      |
| 19. Maine         | 41. New Mexico     |
| 20. Idaho         | 42. Nevada         |
| 21. West Virginia | 43. Vermont        |
| 22. Washington    | 44. New York       |

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### Coaches in England

Coaches were first used in England in 1580; an act passed to prevent men riding in coaches, as effeminate, in 1601; began to be common in London, 1605; hackney coaches began in 1634, when Captain Baily set up four in number; were prohibited in 1635; fifty hackney coachmen only were allowed in 1637; limited to two hundred in 1652; to three hundred in 1654; to four hundred in 1661; to seven hundred in 1694, when they were first licensed; to eight hundred in 1710; to one thousand in 1771.

**Indians in U. S.—Numbers and Cost**

In 1917 there were 335,998 Indians in this country, distributed as follows:

|                   |        |                   |         |
|-------------------|--------|-------------------|---------|
| Alabama .....     | 909    | Nebraska .....    | 3,945   |
| Arizona .....     | 44,617 | Nevada .....      | 7,944   |
| Arkansas .....    | 460    | New Hampshire .   | 34      |
| California .....  | 15,362 | New Jersey.....   | 168     |
| Colorado .....    | 898    | New Mexico .....  | 20,853  |
| Connecticut ..... | 152    | New York.....     | 6,272   |
| Delaware .....    | 5      | North Carolina .. | 8,118   |
| Dist. of Columbia | 68     | North Dakota ...  | 8,903   |
| Florida .....     | 586    | Ohio .....        | 127     |
| Georgia .....     | 95     | Oklahoma .....    | 119,108 |
| Idaho .....       | 4,168  | Oregon .....      | 6,612   |
| Illinois .....    | 188    | Rhode Island....  | 284     |
| Indiana .....     | 279    | South Carolina... | 331     |
| Iowa .....        | 360    | South Dakota ...  | 21,246  |
| Kansas .....      | 1,427  | Tennessee .....   | 216     |
| Kentucky .....    | 234    | Texas .....       | 702     |
| Louisiana .....   | 780    | Utah .....        | 2,854   |
| Maine .....       | 892    | Vermont .....     | 26      |
| Maryland .....    | 55     | Virginia .....    | 539     |
| Massachusetts ..  | 688    | Washington .....  | 11,181  |
| Michigan .....    | 7,514  | West Virginia ... | 36      |
| Minnesota .....   | 11,777 | Wisconsin .....   | 10,216  |
| Mississippi ..... | 1,253  | Wyoming .....     | 1,674   |
| Missouri .....    | 313    |                   |         |
| Montana .....     | 11,525 | Total .....       | 335,998 |

The total expenditures of our Government, on account of the Indians, from its foundation to 1917 amounted to \$631,273,129.45.

**Eclipses**

The most remarkable eclipses of the sun: Observed at Sardis, and predicted by Thales, 585 before Christ. At Athens, 424 before Christ. At Rome, caused a total darkness at noonday, A. D. 291. At Constantinople, 968. In France, June 29, 1033, dark at noonday. In England, March 21, 1140, occasioned a total darkness. Another on the 22d of June, 1191, entire darkness and the stars were visible at ten in the morning. In the same year a second sun was seen beside the true one, so that astronomers alone could distinguish the difference by their glasses. Another in 1331. A total eclipse of the sun in England, when the darkness was so great that the stars faintly appeared, and the birds went to roost in the morning about ten, April 22, 1715.

### FORTUNE TELLING

Few persons are entirely free from any superstitious ideas, though many that scoff at the idea of fortune telling by cards or hands. Yet there is much character expressed by the hand and its indents, and those clever in reading the lines may form a very fair judgment of a person's attributes by a careful study of their palms. The contour of the fingers, the softness or hardness of the texture of the skin, all help the intelligent reader.

And what character is expressed in shaking hands. There is the awkward shake that shows lack of education and breeding, the loose clasp of laziness and inertness, the touch of coldness, and the warm, firm grasp of friendship or interest. A hand-shake is a wonderful index of character, and almost equally so are the lines of the hand and the shape of the fingers.

Long hands, generally considered the most beautiful, show more intelligence than short ones, and to them are attributed capabilities for detail and perseverance to overcome difficulties.

A short hand is generally owned by a person of warm affections and hasty judgment.

A firm and rather hard hand should belong to one possessed of energy and determination.

Limp, loosely made hands almost always denote lack of energy.

Rough, knotted hands denote reflection, order and intellect.

Smooth hands should belong to those who are quick to discern and impressionable.

To each finger the name of a god is given—to the first Jupiter, the second Saturn, the third Apollo, the fourth Mercury.

*Jupiter*, the first finger, if long, indicates an economical, thoughtful disposition; square, truthfulness; pointed, sensitiveness and quickness of intellect.

*Saturn*, the second finger, if pointed, shows a frivolous nature; if square, a prudent one.

*Apollo*, the third finger, if square, denotes a



reasonable, truthful nature; if pointed, artistic feeling; and if blunt and spade-shaped, dramatic and musical talent.

*Mercury*, the fourth finger, if pointed, shows eloquence; and if square, good judgment; if it is straight, honorable feeling.

The thumb denotes love, will and judgment, according to its development. The first joint shows will, the second judgment, and the lower part affection.

A hand that, when held open, has the fingers well apart shows originality, independence and self-reliance.

Fingers that may be termed cushioned at the inner side of the tips show delicacy of touch.



#### EXPLANATION OF DIAGRAM.

- |                 |                     |
|-----------------|---------------------|
| A—Line of Heart | E—Line of Health    |
| B—Line of Head  | F—Line of Apollo    |
| C—Line of Life  | G—"Girdle of Venus" |
| D—Line of Fate  | H—The Racettes      |

The lines on the hand indicate character and fortune. The line of life, if long and deep, shows that the life should be long and free from illness; if short, and faintly marked, the reverse.

The line of mind, or head, as it is sometimes called, should be even, narrow, and long; and if well separated from the line of life, the character should be self-reliant and strong.

The line of heart, if of a dark color and deep, indicates true affection.

The line of fate should indicate the destiny of the owner. If it comes from the line of life, good fortune may be predicted; if from the lines at wrist, some strange fate or uncommon life.

The line of fortune shows worldly fame, riches and honor, if it be deep and high.

The lines at the wrist, generally denominated bracelets, show: the upper one, if well marked, good health; the lower one, happiness.

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### Fortune Telling From the Teacup

The residue at the bottom of the cup, after the tea has been drunk, is well shaken about, and then the cup reversed in the saucer. The tea-leaves adhere to the sides and bottom of the cup and there form resemblances to certain objects and signs. From these shapes certain happenings are supposed to be forecast. For example, if the leaves form something like a letter of the alphabet, it is supposed to foretell the receipt of a letter and the initial of the sender; if there seem to be lines, they indicate a journey. A ring signifies marriage, and if there is a letter also in the cup, it foretells the initial of the party to be married. If the leaves form in the shape of flowers, such as a lily or a rose, they have the same signification as the flowers themselves, i. e., a lily would denote a clear time and happiness ahead; a leaf of clover (a lucky sign) would foretell good fortune. A wormlike sign, reminiscent of a serpent, would warn one of danger from friends. A treelike form, if falling over, would denote sickness, and if upright, good health. A cloudy effect, if heavy, means trouble, or happiness if very faint. If the signs are at the bottom of the cup the happenings will take place immediately. The further

away they are from the bottom of the cup the further away is the fulfilment of the prognostication.

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### Fortune Telling by Cards

Take from the pack the four Aces, Kings, Queens, Knaves, Tens, Nines, Eights and Sevens. Shuffle the cards well and then cut them into three packs; take up the first pack and turn up the cards in threes. When the three cards are all of the same suit, lay them out in a row on the table; when of three different suits, put them aside; if there are two of one suit and one of another, take the highest of the two and lay it alongside those already out. When the first pack is used deal with the second and then the third in the same manner. When you have come to the end of the three packs, gather the cards that have been discarded, shuffle them and cut the pack into three, and turn up by threes again in the same manner as before. This must be done three times. The third and last time the person shuffling the cards must take out and add to the "fortune" row a card which is supposed to represent the person whose fortune is being told. If it be a dark lady or gentleman whose fortune is being told, use the Queen or King respectively of Spades or Clubs, and if required to represent a fair lady or gentleman the Queen or King of Hearts or Diamonds respectively; also set aside the Ace of Hearts, which represents the house, and the nine of Hearts, which is the wish card, unless these cards already appear in the "fortune" row. The cards that have not come out are now placed aside and the fortune of the shuffler of the cards is told in the following manner: Count from the card representing the person whose fortune is to be told and read every seventh card backward and forward, then count from the "house" (Ace of Hearts) in same way, then from the "wish" (nine of Hearts).

After counting, take the first and last cards

away from those laid out and read. Suppose the first is the Ace of Clubs, and the last the ten of Clubs, that would read "a letter with unexpected news." Now take the first and last card again, say nine of Diamonds and ten of Hearts, that would read "money from a big house, or a present." Keep taking up first and last cards until all are gathered up, now shuffle and cut as before and deal them out one at a time into four lots—the first "what you don't expect," the second for the house, the third for yourself, and the fourth True Fortune. This last must only contain two cards, i. e., the first and last dealt.

#### NAMES OF CARDS.

|                                          |                             |
|------------------------------------------|-----------------------------|
| Ace of Hearts.....                       | <i>The House</i>            |
| King of Hearts.....                      | <i>Fair Gentleman</i>       |
| Queen of Hearts.....                     | <i>Fair Lady</i>            |
| Knave of Hearts.....                     | <i>Fair Young Gentleman</i> |
| Ten of Hearts.....                       | <i>A big house</i>          |
| Nine of Hearts.....                      | <i>The Wish</i>             |
| Eight of Hearts.....                     | <i>A Good Heart</i>         |
| Seven of Hearts.....                     | <i>A Faint Heart</i>        |
| Ace of Diamonds.....                     | <i>Ring or present</i>      |
| King of Diamonds.....                    | <i>Fair Gentleman</i>       |
| Queen of Diamonds.....                   | <i>Fair Young Lady</i>      |
| Knave of Diamonds....                    | <i>Fair Young Gentleman</i> |
| Ten of Diamonds.....                     | <i>Business</i>             |
| If Ace and Ten come<br>together .....    | <i>Marriage</i>             |
| Nine of Diamonds.....                    | <i>Money</i>                |
| Eight of Diamonds.....                   | <i>Rise in Life</i>         |
| Seven of Diamonds.....                   | <i>Mischief</i>             |
| Ace of Clubs.....                        | <i>A Letter</i>             |
| King of Clubs.....                       | <i>Dark Gentleman</i>       |
| Queen of Clubs.....                      | <i>Dark Young Lady</i>      |
| Knave of Clubs.....                      | <i>Dark Young Gentleman</i> |
| Ten of Clubs.....                        | <i>Unexpected News</i>      |
| Nine of Clubs.....                       | <i>A Journey</i>            |
| Eight of Clubs.....                      | <i>An Annoyance</i>         |
| Seven of Clubs.....                      | <i>Tears</i>                |
| Ace of Spades.....                       | <i>Sickness</i>             |
| If this comes with ten<br>of Spades..... | <i>Death</i>                |



|                      |                                      |
|----------------------|--------------------------------------|
| King of Spades.....  | <i>Very Dark Gentleman</i>           |
| Queen of Spades..... | <i>Very Dark Lady</i>                |
| Knave of Spades..... | <i>A Young Man not to be trusted</i> |
| Ten of Spades.....   | <i>Unpleasant News</i>               |
| Nine of Spades.....  | <i>Disappointment</i>                |
| Eight of Spades..... | <i>Slight Illness</i>                |
| Seven of Spades..... | <i>Vexing and Confusion</i>          |

If the following appear in the fortune line they foretell:

|               |                                                                             |
|---------------|-----------------------------------------------------------------------------|
| 3 Sevens..... | <i>A Removal</i>                                                            |
| 3 Tens.....   | <i>A Great Surprise</i>                                                     |
| 3 Jacks.....  | <i>Some Knavery or Mischief Making</i>                                      |
| 3 Queens..... | <i>A Quarrel</i>                                                            |
| 3 Kings.....  | <i>A Lawsuit</i>                                                            |
| 3 Aces.....   | <i>A Surprise (pleasant, unless the Ace of spades is one of the three).</i> |

If the card representing the person whose fortune is being told comes among several picture cards, it means that he or she is going into company, unless the three Kings—a lawsuit—are amongst them.

### Origin of "Uncle Sam"

In the war of 1812 between this country and Great Britain, Robert Anderson of New York purchased in Troy, N. Y., a large amount of pork for the American Army.

It was inspected by Samuel Wilson, who was popularly known as "Uncle Sam." The barrels of pork were marked "E. A. U. S.," the lettering being done by a facetious employee of Mr. Wilson. When asked by fellow workers the meaning of the mark (for the letters U. S., for United States, were then almost entirely new to them), he said "he did not know unless it meant Elbert Anderson and Uncle Sam," alluding to Uncle Sam Wilson.

The joke took among the workmen and passed currently and "Uncle Sam" himself, being present, was occasionally rallied on the increasing extent of his possessions. Soon the incident appeared in print, and the joke spread rapidly.

## DREAMS

The following is a list of the subjects of dreams and the significance they have had for those that believe that our nightly visions should not be denominated "The baseless fabric of a dream":

ABODE (a strange one).—Foretells changes in your life. If turned out of one beware of danger.

ABOARD.—Going aboard a ship denotes success.

ABROAD in a foreign land denotes change in prospects.

ABSENT ONES.—If that these are ill, it means they are in danger; if well, they are prosperous.

ABUNDANCE of good things is significant of want.

ABYSS.—Falling into one denotes trouble at hand.

ACROBAT.—Danger and risk of life.

ADORNMENT.—To dream of dressing smartly denotes probable loss of means.

ADVERSITY signifies prosperity.

ADVICE.—Being advised or admonished foretells business troubles.

AFFECTION (slighted) means the reverse.

AGONY denotes prosperity.

AMPUTATION of a limb is a warning of the death of some relative.

ANCHOR means a sailor for a lover or husband.

ANGELS signifies peace and happy intercourse with friends.

ANGER towards a friend indicates that he is a good and tried one.

ANGLING.—If you catch a fish it is a sign of prosperity.

ANTS (and other insects) denote change of abode.

APES.—Denote enemies and danger.

APPAREL.—White, good luck; black, bad luck; blue, prosperity; scarlet, calamity and loss of friends; variety of colors, a checkered future.

APPLAUSE given to oneself means scandal.

APPLES signify prosperity and love.

ASHES means jealousy in a lover, also calamity and loss.

ASSASSIN.—Shows pretended friends whom you cannot perfectly trust.

ASYLUM.—Denotes trouble and most likely poverty.

AUCTION.—If you buy anything at one you will suffer a loss.

BABY.—Dreaming of nursing one indicates sorrow.

BAGPIPES show that you will be poor.

BALCONY.—Sitting on one with a lover, it is a token of his jealousy.

BALLOON.—Denotes speculation in business.

BANQUET.—Denotes prosperity.

BATH.—A cold one means pleasure, a hot one, pain.

BEAR.—Petty worries to come.

BED.—Making of one shows you will move into a larger house.

BEEF denotes plenty.

BELLS denote speedy marriage, or fortune.

BEGGARS, if you relieve them, signify good fortune.

BIRDS flying denote your riches following them.

BISCUITS signify sickness.

BITE.—A supposed friend will do you harm.

BLINDNESS, to one in love, shows her choice is not good.

BLOOD is a bad sign.

BOATS in clear water are a sign of prosperity; if in rough water, adversity.

BONNET.—A new one foretells a new admirer.

BOOKS show a young woman she will marry a learned man.

BOOTS warn you of imprudence.

BOUQUET means delay in marriage.

BRACELETS denotes speedy, wealthy marriage.

BREAD is a sign you will always have enough.

BRIDE.—To dream you are one denotes you may never change your name.

BUILDING, if new, denotes a speedy change of residence.

BULL.—Means you are in danger.

BURGLARS is a great sign of success in life.

CAGE with a bird in it denotes success in your next venture; with no bird, disappointment.

CANDLES, burning brightly, signify good news; going out, bad news.

CARDS denote a speedy marriage, and if there are many diamonds, you will be lucky.

CARRIAGES, if dreamt of, mean loss of wealth.

CATS are prophetic of treachery.

CATTLE, peacefully grazing, denote prosperity; fierce-looking, long-horned cattle, you will be attacked by enemies.

CHILDREN foretell success in business.

CHURCH OR PLACE OF WORSHIP.—If you are there in black, expect a wedding in your family; if in white, a funeral.

COCKS CROWING.—Beware of a treacherous friend.

COFFINS are an omen of death.

COMPLEXION is one of the dreams of contrary; if you see your face spotted and freckled, expect a return to health if you are not well.

CONCERTS.—There will be disagreements between you and your relatives.

COOKING denotes some festivity in store.

CORN OR CORNFIELDS denote prosperity and fortune.

CORPSE.—The omen of a hasty and unfortunate marriage.

DANCING.—Your plans will succeed, and you will marry well.

DEAD FRIENDS means news of living ones abroad.

DIAMONDS indicate wealth and prosperity.

DIRT indicates misfortune.

DISPUTING.—You will quarrel with some business person.

DOCTOR.—Denotes you will not need one.

DOGS, fondling you, are omens of good; if one bites you, a friend will be traitorous.

DONKEYS foretell the death of a well-known person.

DRIVING is a forerunner of loss of money.

DROWNING is a sign of danger at hand.

EATING signifies quarrels and losses.

EGGS suggest gain and profit in trade.



**ENEMY.**—If you dream you beat one, you will triumph.

**ERMINE** is a sure sign of coming greatness.

**EARWIG.**—Means an enemy.

**EVERGREENS** show lasting love, honor, and happiness.

**FACES.**—Strange ones are significant of change of residence.

**FAIR.**—If you are at one it is prophetic of failure in business.

**FAMINE.**—A dream of contrary.

**FAREWELL.**—Shows changes for the better in your business.

**FARTHING.**—Expect bad news.

**FENCE.**—Denotes a rise in prospects.

**FIDDLE OR VIOLIN.**—Denotes a speedy marriage unless a string breaks, when you will become a bachelor or old maid.

**FIELDS**, green and pleasant, show you will have happiness.

**FIRE.**—A warm, bright one shows the approach of friends and happiness.

**FLAG.**—A waving one is a warning of danger.

**FLOATING** in water denotes long life.

**FLOWERS**, if beautiful and fresh, are omens of good; if dead, of sickness; if only red and white, a death.

**FLYING** denotes an escape from difficulties and troubles.

**FOG** should warn you that you will be unlucky.

**FOREST.**—Wandering in one shows that you will ere long achieve distinction.

**FRUIT.**—Almonds foretell difficulties; apples and apricots, prosperity; cherries, disappointment; currants and figs, success; gooseberries, many children; grapes, happy marriage; lemons, quarrels; melons, recovery from sickness; nuts, riches; oranges, losses; peaches, happy love.

**GARDEN.**—A well stocked one denotes success in every business or profession in which you are engaged.

**GHOST** is an omen of evil.

**GOLD** means poverty.

GOOSE.—If a young man dreams of one, he will have a foolish wife.

GUN denotes the death of a friend.

HAILING OR SNOWING denotes losses in business.

HAIR is a sign of approaching sickness.

HANDS, if tied, denote coming difficulties.

HARP.—Some one is trying to injure you.

HAY.—Denotes prosperity and respect.

HEDGES are signs of pleasant prospects.

HEDGEHOG.—You will meet a long lost friend.

HENS signify joy and happiness.

HOME, of your childhood, an indication of happy love and peace.

HORSESHOE is indicative of good luck coming.

HUNTING.—If you make a capture is luck, and vice versa.

HUSBAND.—To dream you have one, if you are not married, is a dream of contrary. You will not marry.

ICE denotes failure in your undertakings.

ILL.—To dream you are ill signifies temptations to be resisted.

INK means your plans will succeed, but if you soil your fingers or spill it you will fail.

IVORY signifies prosperity in all things.

IVY is a sign that your lover or your husband and your friends are true and constant.

JACKDAW.—Beware of danger.

JEWELS are lucky.

JOURNEY.—Shows a great change in your circumstances.

JUG.—If you drink out of one you will have to take a journey.

KEYS.—A bunch mean riches; if you give one, it will mean an offer of marriage; if you lose one, you will be disappointed.

KISSING.—If your sweetheart kisses another, he will prove unfaithful.

KITE.—Denotes promotion in life.

KNIVES are omens of evil, particularly if they be clean and bright.

LABOR.—To dream you are working hard signifies that your life will be an easy one.

LADDER.—You will succeed in what you are attempting.

LAMPS, burning brightly, are omens of success to what you wish; dimly, sickness.

LARK denotes good health.

LAUGHTER means tears and troubles in store.

LAUREL means success and victory.

LAWYER is an omen of loss.

LEAVES upon a tree show a wedding.

LENDING is an omen of annoyance from friends.

LETTER.—The receipt of one means very unexpected news; of sending one, that you will give a present.

LIGHTNING, to see without hearing thunder is to the sailor a good voyage; to the farmer, good crops; to the lover, good luck.

LION means future power.

LOCKS, that you cannot unlock, portend great difficulties in store; if you succeed in turning the keys, you will gain victory over your troubles.

LOVE.—Whatever you dream about this sentiment it foretells the contrary.

LUGGAGE denotes trouble.

MAD DOGS are lucky to dream of.

MARIGOLDS show constant lovers and friends for you.

MARRIAGE means a funeral.

MEDICINE, if nasty, suggests some small vexations.

MICE denote there is scandal about you.

MIRROR.—It is unlucky for a young woman to see herself in a mirror.

MONEY, if you pay it, is prophetic that you will really be able to do so; if you receive it, it is the sign of the birth of a child.

MONKEYS dreamt of are omens of treacherous friends.

MOTHER.—Is a good omen.

MUSHROOMS.—Mean wealth.

MUSIC signifies news from distant friends.

NEST foretells marriage.

NETTLES show good fortune and honor.

NIGHT.—Sudden darkness overtaking you is a sign of misfortune.

NOSE BLEEDING is a warning of sickness.

NUTS, with good kernels, show you will gain money.

OAK.—A vigorous green one is a sure sign of success and happiness; one struck by lightning is an omen.

ONIONS.—You will discover money.

ORGAN.—Is an omen of good fortune.

OWL.—Foretells sickness.

PAIN signifies that you will have pleasure.

PALACE foretells success.

PARCEL.—One that you open means news from afar.

PATCHES.—To dream you are patching and mending clothes prognosticates that you will have new and good ones.

PEARLS foretell that you will die rich.

PEAS, growing, represent good fortune to the lover.

PHEASANTS or other birds flying foretell a legacy.

PIGS are the omens of false friends and a faithless lover.

PIGEONS flying are a sign that your sweetheart is good and true.

PISTOL is an omen of evil.

PLAY.—Foretells a happy union.

POLICE.—There is honor in store.

PRIMROSES are very unlucky flowers to dream of; they are the forerunners of sickness and trouble.

PRECIPICES.—A warning to turn back from whatever fresh undertaking you are thinking of.

PURSE.—Is the harbinger of great happiness.

RACE.—If you win one, means you will succeed in business.

RAGS denote prosperity.

RAIL, traveling by, denotes a friend will pay you a visit.

RAIN foretells trouble.

RATS are significant of enemies at hand.



RICE is a dream of riches.

RING.—Signifies an offer of marriage; the breaking or losing of one signifies widowhood.

RIVER.—To see one calm and bright, means peace and tranquillity; if swollen and turbulent, trouble and perplexity.

ROPES.—Beware of entering into agreements for a time.

ROSES, if in season, mean good luck; if you dream of them in winter, it is bad luck.

SCISSORS signify a speedy marriage.

SERPENTS OR SNAKES denote deadly enemies.

SILK is a token of success in your next venture.

SILVER.—You will not need to fear poverty for a long time.

SOLDIERS signify quarreling.

SPIDERS indicate that you will receive money.

STRAW signifies loss.

TEETH coming out is very unlucky, denoting sickness approaching.

TEMPEST is significant of troubles that you will overcome.

THORNS.—These are bad; they mean small trials and difficulties at the least.

TUMBLE denotes the probable failure of your wishes.

TUNNELS denote short-lived troubles.

UMBRELLA signifies great losses.

VALENTINE.—One received by a girl is a very bad sign, showing her sweetheart is ill.

WALLS show you will not be successful.

WASHING means recovery from illness.

WEDDING.—Indicates a funeral shortly.

WEEPING is a sign you will rejoice.

WIFE.—If you are not married, signifies that you will be an old maid.

WOUNDED.—A wound means rejoicing.

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### Grand Army of the Republic

First formed in Decatur, Ill., April 6, 1866, at suggestion of Dr. B. F. Stephenson. The membership Dec. 31, 1917, 120,916, divided into 4,863 posts.

**CONUNDRUMS AND RIDDLES**

The following collection of conundrums will, we hope, give much amusement:

Why is a dog biting his tail like a good manager? Because he makes both ends meet.

If a spider were late for dinner, what would he do? Take a fly.

Why are fowls the most economical things a farmer can keep? Because for every grain they give a peck.

Why is a watch-dog bigger by night than by day? Because he is let out at night and taken in in the morning.

What piece of coin is double its value by deducting its half? Half-penny.

When is a clock on the stairs dangerous? When it runs down.

If a bear were to go into a linen draper's shop, what would he want? Muzzlin'.

If a tree were to break a window, what would the window say? Tree-mend-us!

State the difference between a grocer selling a pound of sugar and an apothecary's boy with a pestle and mortar? One weighs a pound and the other pounds away.

When a hen is sitting across the top of a five-barred gate, why is she like a penny? Because she has a head on one side and a tail on the other.

What is the most dangerous time of the year to go into the country? When the trees are shooting and the bull-rushes out!

Why was the whale that swallowed Jonah like a milkman who has retired on an independency? Because he took a great profit out of the water.

What is the key-note of good manners? B natural.

I am for ever, yet was never? Eternity!

When may you be said to literally "drink in" music? When you have a piano-for-tea.

What is the difference between an engine-driver and a schoolmaster? One minds the train and the other trains the mind.

Why is o the noisiest of all the vowels? Because you can't make a horrid loud noise without it, whilst all the others are inaudible.

Why can a fish-monger never be generous? Because his business makes him sell-fish.

When is a bonnet not a bonnet? When it becomes a pretty woman.

What is that which works when it plays, and plays when it works? A fountain.

In what tongue did Balaam's donkey speak? Probably in the He-bray-ic.

What is the difference between a fisherman and a lazy schoolboy? One baits his hook and the other hates his book.

What words may be pronounced quicker and shorter by adding syllables to them? Quick and short.

Why is it certain that *Uncle Tom's Cabin* was not written by a female hand? Because it was written by Mrs. Beecher's toe.

Why are birds melancholy in the morning? Because their little bills are all over dew!

What is the difference between the Prince of Wales, an orphan, a baldheaded old man and a gorilla? The first is an heir apparent; the second has ne'er a parent; the third has no hair apparent; and the fourth has a hairy parent.

What is the difference between your last will and testament and a man who has eaten as much as he can? One is signed and dated, the other dined and sated.

When does a leopard change his spots? When he moves from one spot to another.

What would a pig do who wished to build himself a habitation? Tie a knot in his tail and call it a pig's tie!

Which are the lightest men—Scotchmen, Irishmen, or Englishmen? In Ireland there are men of Cork; in Scotland men of Ayr; but in England, on the Thames, we have lighter-men.

Why is a miserly uncle with whom you have quarreled like a person with a short memory? Because he is ever for-getting and never for-giving.

Why is a comet more like a dog than the dog-star? It has a tail, and the dog-star hasn't.

What was it a blind man took at breakfast which restored his sight? He took a cup and saw, sir!

When is a teapot like a kitten? When your teasin' it (tea's in it).

When is a blow from a lady welcome? When she strikes you agreeably.

What's the difference between a professional pianoforte player and one that hears him? One plays for his pay, the other pays for his play.

What is the difference between an accepted and an unaccepted lover? One kisses his missis, and the other misses his kisses.

When is a fruit-stalk like a strong swimmer? When it stems the currants.

Why is love like a canal boat? Because it's an internal transport.

Why is it easy to break into an old man's house? Because his gait is broken and his locks are few.

When were there only two vowels? In the days of No-a, before U or I were born!

What is the difference between love and war? One breaks heads, the other hearts.

What is that from which you may take away the whole and yet have some left? The word wholesome.

What sort of tune do we all enjoy most? Fortune, made up of bank-notes.

How many P's are there in a pint? One P.

Why would an owl be offended at your calling him a pheasant? Because you would be making game of him.

What is it gives a cold, cures a cold, and pays the doctor's bill? A draft.

What is that which is black, white, and red all over; which shows some people to be green, and makes others look black and blue? A newspaper.

What game do the waves play at? Pitch and toss.



What was Joan of Arc made of? She was Maid of Orleans.

When is a black dog not a black dog? When he's a grey-hound.

Why are sugar-plums like race-horses? Because the more you lick them the faster they go.

Which eats most grass—black sheep or white? White, because there are more of them.

When is a schoolmaster like a man with one eye? When he has a vacancy for a pupil.

What letter in the Dutch alphabet will name an English lady of title? A Dutch S.

What is that which every one wishes for and yet wants to get rid of as soon as obtained? A good appetite.

What did the engine-whistle say to the stoker? Don't touch me or I'll scream?

Why is a waiter like a racehorse? Because he runs for cups and plates and steaks!

Why should the poet have expected the woodman to "spare that tree"? Because he thought he was a good feller.

What is that which is put on the table and cut, but never eaten? A pack of cards.

How many wives are you allowed by the Prayer Book? Sixteen, viz.: fo(u)r better, 4 worse, 4 richer, 4 poorer; total, sixteen.

What is that which lives in winter, dies in summer, and grows with its root upwards? An icicle.

Why have chickens no fear of a future state? Because they have their next world (necks twirled) in this.

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### The White House

The residence of the President of the United States is officially known as the Executive Mansion, which means that it is the residence of the head of the Executive branch of the Government; but it is seldom called, in ordinary talk, either by those who live in it, or by the American people in general, anything but the White House.

### Population of United States and Its Possessions (Census of 1920)

|                                          |             |
|------------------------------------------|-------------|
| Continental United States.....           | 105,708,771 |
| Alaska .....                             | 54,899      |
| American Samoa .....                     | 8,056       |
| Guam .....                               | 13,275      |
| Hawaii .....                             | 255,912     |
| Panama Canal Zone.....                   | 22,858      |
| Porto Rico .....                         | 1,299,809   |
| Military and naval, etc., service abroad | 117,238     |
| Philippine Islands (1918).....           | 10,350,640  |
| Virgin Islands .....                     | 26,051      |

Total .....117,857,509

The population of the Continental United States in 1910 was 91,972,266; of the outlying possessions, 9,174,264; total, 101,146,530.

### Largest Cities in the World

|                          |           |                             |           |
|--------------------------|-----------|-----------------------------|-----------|
| Adelaide .....           | 205,000   | Chicago .....               | 2,701,705 |
| Akron, O.....            | 208,435   | Ching Fing<br>(China) ..... | 598,000   |
| Alexandria .....         | 405,382   | Christiania .....           | 241,834   |
| Amsterdam ....           | 628,404   | Cincinnati .....            | 401,247   |
| Athens .....             | 167,479   | Cleveland .....             | 796,836   |
| Atlanta, Ga.....         | 200,616   | Cologne .....               | 516,527   |
| Bahia .....              | 290,000   | Colombo .....               | 213,396   |
| Baltimore .....          | 733,926   | Columbus .....              | 237,031   |
| Bangkok .....            | 628,675   | Constantinople .            | 1,200,000 |
| Barcelona .....          | 621,419   | Copenhagen ....             | 605,772   |
| Belfast .....            | 399,000   | Damascus .....              | 250,000   |
| Benares .....            | 203,804   | Delhi .....                 | 232,837   |
| Berlin .....             | 3,709,000 | Denver .....                | 256,369   |
| Birmingham,<br>Eng. .... | 860,591   | Detroit .....               | 993,739   |
| Bombay .....             | 979,445   | Dresden .....               | 548,308   |
| Bordeaux .....           | 261,678   | Dublin .....                | 406,000   |
| Boston .....             | 748,060   | Dusseldorf .....            | 358,728   |
| Bradford .....           | 290,642   | Edinburgh .....             | 326,901   |
| Bremen .....             | 247,437   | Essen .....                 | 294,653   |
| Breslau .....            | 512,105   | Florence .....              | 242,147   |
| Bristol, Eng....         | 361,573   | Frankfort .....             | 414,576   |
| Brussels .....           | 663,647   | Fuchow .....                | 624,000   |
| Bucharest .....          | 345,628   | Genoa .....                 | 300,139   |
| Budapest .....           | 880,371   | Glasgow .....               | 1,072,793 |
| Buenos Aires... 1,       | 596,927   | Hamburg .....               | 931,035   |
| Buffalo .....            | 506,775   | Hangchow .....              | 350,000   |
| Cairo, Egypt....         | 740,000   | Hankow .....                | 826,000   |
| Calcutta .....           | 1,122,313 | Hanover .....               | 302,375   |
| Canton (China).          | 900,000   | Havana .....                | 359,259   |
| Charlottenburg .         | 305,978   | Hongkong .....              | 366,145   |
| Chemnitz .....           | 287,807   | Hull .....                  | 287,472   |

|                  |           |                  |           |
|------------------|-----------|------------------|-----------|
| Hyderabad .....  | 500,623   | Pekin .....      | 692,500   |
| Indianapolis ... | 314,194   | Petrograd .....  | 2,318,645 |
| Jersey City..... | 297,864   | Philadelphia ... | 1,823,158 |
| Johannesburg ..  | 237,220   | Pittsburgh ..... | 588,193   |
| Kansas City....  | 324,410   | Portland, Ore... | 258,288   |
| Kharkov .....    | 249,698   | Portsmouth, Eng. | 241,748   |
| Kiel .....       | 211,627   | Prague .....     | 541,500   |
| Kiev .....       | 626,313   | Providence ....  | 237,595   |
| Kobe .....       | 498,315   | Rangoon .....    | 293,316   |
| Konigsberg ....  | 245,994   | Riga .....       | 558,000   |
| Kyoto .....      | 539,153   | Rio de Janeiro.. | 1,128,637 |
| Lahore .....     | 228,687   | Rochester, N. Y. | 295,750   |
| Leeds .....      | 457,507   | Rome .....       | 590,960   |
| Leicester .....  | 231,152   | Rosario .....    | 234,725   |
| Leipsic .....    | 589,850   | Rostov-on-Don .  | 204,725   |
| Lemberg .....    | 212,000   | Rotterdam .....  | 487,077   |
| Lille .....      | 217,807   | St. Louis.....   | 772,897   |
| Lisbon .....     | 435,359   | St. Paul.....    | 234,595   |
| Liverpool .....  | 763,926   | Salford .....    | 232,970   |
| London .....     | 7,419,704 | San Francisco..  | 508,410   |
| Los Angeles....  | 576,673   | Santiago, Chile. | 408,247   |
| Louisville.....  | 234,891   | Sao Paulo.....   | 450,000   |
| Lucknow .....    | 259,798   | Saratov .....    | 235,300   |
| Lyons .....      | 523,796   | Seattle .....    | 315,652   |
| Madras .....     | 518,660   | Seoul .....      | 278,958   |
| Madrid .....     | 648,760   | Shanghai .....   | 651,000   |
| Magdeburg ....   | 279,629   | Sheffield .....  | 472,234   |
| Manchester, Eng. | 731,830   | Singapore .....  | 303,321   |
| Manila .....     | 283,613   | Smyrna .....     | 375,000   |
| Marseilles ..... | 550,619   | Stettin .....    | 236,113   |
| Melbourne .....  | 684,000   | Stockholm .....  | 408,702   |
| Mexico City..... | 471,066   | Stoke-on-Trent . | 239,515   |
| Milan .....      | 663,059   | Stuttgart .....  | 286,218   |
| Milwaukee .....  | 457,147   | Suchow .....     | 500,000   |
| Minneapolis .... | 380,582   | Surat .....      | 114,863   |
| Montevideo ....  | 376,163   | Swansea .....    | 114,663   |
| Montreal .....   | 470,480   | Sydney, N. S. W. | 763,300   |
| Moscow .....     | 1,817,100 | Tabriz .....     | 200,000   |
| Munich .....     | 596,467   | Teheran .....    | 280,000   |
| Nagoya .....     | 389,272   | The Hague .....  | 334,081   |
| Nanking .....    | 267,000   | Tientsin .....   | 800,000   |
| Naples .....     | 697,917   | Tokyo .....      | 2,349,830 |
| Neukoeln .....   | 237,289   | Toledo .....     | 243,109   |
| Newark, N. J.... | 415,609   | Toronto .....    | 376,538   |
| Newcastle .....  | 271,523   | Trieste .....    | 246,500   |
| New Orleans....  | 387,408   | Tunis .....      | 277,083   |
| New York.....    | 5,621,151 | Turin .....      | 451,994   |
| Ningpo .....     | 350,000   | Valencia .....   | 245,871   |
| Nottingham ....  | 264,970   | Vienna .....     | 2,149,800 |
| Nurnberg .....   | 333,142   | Vilna .....      | 203,940   |
| Oakland .....    | 216,361   | Washington ....  | 437,571   |
| Odessa .....     | 631,040   | West Ham .....   | 294,476   |
| Osaka .....      | 1,460,218 | Yekaterinoslav . | 220,446   |
| Palermo .....    | 345,891   | Yokohama .....   | 428,663   |
| Paris .....      | 2,888,110 | Zurich .....     | 200,200   |

**Abbreviations of Titles and Degrees**

- A. R. A.—Associate of the Royal Academy.
- B. A.—Bachelor of Arts.
- Bart.—Baronet.
- B. D.—Bachelor of Divinity.
- B. Sc.—Bachelor of Science.
- C. B.—Companion of the Bath
- C. E.—Civil Engineer.
- C. J.—Chief Justice.
- C. M. G.—Companion of Order of St. Michael and St. George.
- C. V. O.—Companion of Victorian Order.
- D. D.—Doctor of Divinity.
- D. Sc.—Doctor of Science.
- D. S. O.—Distinguished Service Order.
- F. R. G. S.—Fellow of the Royal Geographical Society.
- F. R. S.—Fellow of the Royal Society.
- J. P.—Justice of the Peace.
- K. C.—King's Counsel.
- K. C. B.—Knight Commander of the Bath.
- K. C. M. G.—Knight Commander of the Order of St. Michael and St. George.
- K. C. V. O.—Knight Commander of the Victorian Order,
- K. G.—Knight of the Garter.
- L. H. D.—Doctor of Humanities.
- LL. B.—Bachelor of Laws.
- LL. D.—Doctor of Laws.
- Litt. D.—Doctor of Literature.
- M. A.—Master of Arts.
- M. C.—Member of Congress.
- M. D.—Doctor of Medicine.
- M. P.—Member of Parliament.
- M. V. O.—Member of the Victorian Order.
- N. A.—National Academician.
- P. C.—Privy Councilor.
- Ph. D.—Doctor of Philosophy.
- R. A.—Royal Academician.
- S. J.—Society of Jesus.
- U. S. A.—United States Army.
- U. S. N.—United States Navy.
- V. C.—Victoria Cross.



## TRADE MARKS

"The owner of a trade-mark used in commerce with foreign nations, or among the several States, or with Indian tribes, provided such owner shall be domiciled within the territory of the United States, or resides in or is located in any foreign country, which, by treaty, convention, or law, affords similar privileges to the citizens of the United States, may obtain registration for such trade-mark by complying with the following requirements: First, by filing in the Patent Office an application therefor, in writing, addressed to the Commissioner of Patents, signed by the applicant, specifying his name, domicile, location, and citizenship; the class of merchandise and the particular description of goods comprised in such class to which the trade-mark is appropriated; a statement of the mode in which the same is applied and affixed to goods and the length of time during which the trade-mark has been used; a description of the trade-mark itself shall be included, if desired by the applicant or required by the Commissioner, provided such description is of a character to meet the approval of the Commissioner. With this statement shall be filed a drawing of the trade-mark, signed by the applicant, or his attorney, and such number of specimens of the trade-mark, as actually used, as may be required by the Commissioner of Patents. Second, by paying into the Treasury of the United States the sum of ten dollars, and otherwise complying with the requirements of this act and such regulations as may be prescribed by the Commissioner of Patents.

"A certificate of registration shall remain in force twenty years, except that in the case of trade-marks previously registered in a foreign country such certificates shall cease to be in force on the day on which the trade-mark ceases to be protected in such foreign country, and shall in no case remain in force more than twenty years, unless renewed. Certificates of registration may be, from time to time, renewed for like periods on payment of the renewal

fees required by this act, upon request by the registrant, his legal representatives or transferees of record in the Patent Office, and such request may be made at any time not more than six months prior to the expiration of the period for which the certificates of registration were issued or renewed. Certificates of registration in force at the date at which this act takes effect shall remain in force for the period for which they were issued, but shall be renewable on the same condition and for the same periods as certificates issued under the provisions of this act, and when so renewed shall have the same force and effect as certificates issued under this act.

"The registration of a trade-mark under the provisions of this act shall be *prima facie* evidence of ownership. Any person who shall, without the consent of the owner thereof, reproduce, counterfeit, copy, or colorably imitate any such trade-mark and affix the same to merchandise of substantially the same descriptive properties as those set forth in the registration, or to labels, signs, prints, packages, wrappers, or receptacles intended to be used upon or in connection with the sale of merchandise of substantially the same descriptive properties as those set forth in such registration, and shall use, or shall have used, such reproduction, counterfeit, copy, or colorable imitation in commerce among the several States, or with a foreign nation, or with the Indian tribes, shall be liable to an action for damages therefor at the suit of the owner thereof; and whenever in any such action a verdict is rendered for the plaintiff, the court may enter judgment therein for any sum above the amount found by the verdict as the actual damages, according to the circumstances of the case, not exceeding three times the amount of such verdict, together with the costs." (From Act of Feb. 20, 1905.)

Trade-marks are not registrable if they embody immoral designs, or the flag, coat of arms or other insignia of the United States, of a

State or city, etc., of any foreign country, or the officially adopted emblem of any institution, organization, etc., in any State, or any simulation of any of these.

The fee is \$10, payable with each application, and includes certificate of registration.

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### Persecutions of Jews

The seventy years' captivity of the Jews began 606 before Christ; they about Cyrene, headed by one Andree, murdered nearly 100,000 Greeks and Romans; they ate their entrails, and covered themselves with the skins of those they assassinated, 115 after Christ; above 580,000 destroyed by the Romans, 135; first arrived in England, 1079; every Jew, who lent money on usury, was commanded to wear a plate upon his breast, signifying that he was an usurer, or quit the realm, 1274; 267 were hanged and quartered for clipping, 1277; the same year the Jews crucified a child at Northampton, for which fifty were drawn on horses' tails and hanged; all the synagogues were ordered to be destroyed, 1282; all the Jews in England were apprehended in one day, their goods and chattels confiscated to the king, and they, to the number of 15,660, banished the realm, having only sustenance money allowed, 1287; they remained banished 364 years, till Oliver Cromwell restored them; a general massacre of them at Verdun by the peasants, who, from a pretended prophecy, conceived the Holy Land was to be recovered from the infidels by them; 500 of these Jews took shelter in a castle, and defended themselves to the last extremity, when, for want of weapons, they threw their children at the enemy, and then killed each other, 1317; driven out of France, 1394; driven out of Spain, to the number of 150,000, 1492; they retired to Africa, Portugal, and France. It was against them that the Inquisition was there first established. There was not a Jew in England from 1610 to 1624. Act passed to naturalize them, 1753, but repealed on the petition of all the cities in England in 1754.

**PARLIAMENTARY RULES AND USAGES**

The following are the complete rules, in a plain and compact form, for conducting a public meeting:

**QUORUM.**—A quorum is a sufficient number of the members of an association to legally transact business. Unless a quorum is present no business is in order, except to adjourn. A majority of the members constitutes a natural quorum, but the by-laws of the association may provide a smaller number.

**THE CHAIRMAN.**—It is the duty of the chairman to open the meeting at the time fixed upon, by taking the chair, calling the house to order; to announce the business before the house in the order in which it is to be acted upon; to receive and submit all motions; to put to vote all questions which are regularly moved, or which necessarily arise in the course of proceedings, and to announce the result; to restrain every one, when engaged in debate, within the rules of order; to enforce the observance of order and decorum; to appoint committees; to authenticate by his signature, when necessary, all the acts and proceedings of the house, and generally to declare its will.

He may speak to points of order in preference to others; shall decide all questions of order, and if the house is evenly divided he may give the casting vote, in doing which he may, if he pleases, give his reasons.

**THE CLERK.**—It is the duty of the clerk or secretary to keep correct minutes of the proceedings of the house; to read all papers when ordered, and for this purpose he should always rise; to call the roll, and state the answer when a vote is taken by yeas and nays; to have the custody of all papers and documents, and to authenticate the acts and proceedings of the house by his signature.

**COMMITTEES.**—Standing committees sit permanently; special committees perform only some particular duty, when they are discharged. The person first-named is usually regarded as chair-



man, but this is only a matter of courtesy; every committee has a right to select its own chairman. Custom, however, has practically taken away this right, and it is considered bad form to elect any other person than the first-named as chairman. The mover of a motion to commit should be placed on the committee and first-named, except where the matter committed concerns him personally. In the appointment of the committee no person directly opposed to the measure committed should be named, and when any person who is thus opposed to same, hears himself named of its committee he should ask to be excused.

The chair appoints all committees. Committees do not adjourn, but, when they have concluded their deliberations, should rise and report. The report should be presented by the chairman. When the report is received the committee is dissolved and cannot act further without new power.

Any committee required or entitled to report upon a subject referred to them may make a majority and minority report, while any member of such committee dissenting in whole or in part, from either the conclusion or the reasoning of both the majority and minority, may also present a statement of his reasons for such dissent, which should be received in connection with the reports.

The committee of the whole is an expedient to simplify the business of legislative bodies. No record is made of its proceedings. The presiding officer puts the question, and, if same is carried, appoints some person as chairman and then vacates the chair.

**MOTIONS.**—Propositions made to a deliberative assembly are called motions; when the proposition is put to vote it is called the question. A motion cannot be entertained or the question put, until the same has been seconded. After this it becomes the property of the house, and cannot be withdrawn except by leave. It must be in writing whenever the house or presiding officer require it, and must be read upon demand.

An exception to the rule requiring a second to a motion is made in cases when the proposition is to proceed with or to execute an order of the house; as where it is moved to proceed with an order of the day, or where a call is made for the enforcement of some order relating to the observance of decorum.

No motion can be made while a speaker has the floor, nor while another motion is pending, except it be a question of privilege.

AMENDMENTS.—A motion may be amended by inserting or adding words, or by striking out words, or by striking out and inserting words. An amendment takes precedence of the original question and must be first decided. So, too, an amendment to an amendment must be decided before the amendment. A motion may be made to amend, after which a motion will be to amend the amendment, but this is the full limit of the rule by which one motion may be put upon another.

Questions of privilege cannot be amended, except that a motion to postpone can be amended as to time.

THE QUESTION.—The question is first to be put on the affirmative and then on the negative side, the vote in most cases being by oral response. If there are doubts as to the voice of the majority, any one may call for a division. In all cases where the house is equally divided the question is lost, unless the presiding officer affirms it by a casting vote.

When a division is had, those in the affirmative on the question should first rise and be counted, or, if there still be a doubt, or a count be called for, the chairman should appoint two tellers, one from each side, to make the count and report the same to the chairman, who should then declare the same to the house.

In small matters of routine business or trifling importance, such as receiving reports, withdrawing motions, etc., the presiding officer may suppose the consent of the house where no objection

is expressed, and need not give them the trouble of putting the question formally.

A question should be stated by the chair before it is put, after which it is open to debate. Questions may be stated by the chair while sitting, but he should rise to put a question, and should use substantially this form: "As many as are of the opinion that (as the question may be) will say aye;" and, after the affirmative voice is expressed, "As many as are of a contrary opinion, will say no."

After a question has been put it is not debatable, but after the affirmative is put any person who has not spoken before to the question may rise and speak before the negative is put.

**DIVISION OF QUESTION.**—Any person may call for the division of a question if it comprehend propositions in substance so distinct that, one being taken away, a substantive proposition shall remain for decision.

When a question is divided, after the question on the first part, the second is open to debate and amendment.

**PRIVILEGED QUESTIONS.**—When a question is under debate, no motion shall be received, except to adjourn; to lay on the table; for the previous question; to postpone to a day certain; to commit; to amend; to postpone indefinitely. These motions have precedence in the order in which they stand arranged, and are called privileged questions.

A motion to adjourn is always in order and takes precedence of all other motions, and an order of the day takes the place of all questions except adjournment.

When a matter has been laid on the table it may be taken up at any time afterward and considered, but not at the same meeting or session at which it was tabled. Frequently this motion is made to finally dispose of the matter, and it always has this effect when no motion is afterward made to take it up. The proper motion for proceeding with a matter that has been ordered to lie on the table, is, that the house do now pro-

ceed to consider that matter, although it would be proper to move that the matter be taken up for consideration.

There are several questions which, being incidental to every one, will take the place of every one, privileged or not; as, a question of order arising out of any question must be decided before that question.

A motion for indefinite postponement is generally resorted to in order to suppress a question or prevent its coming to vote.

**PREVIOUS QUESTION.**—When any question is before the house any member may move that the question (called the main question) be now put, or, as it is usually termed, may move the previous question. If it pass in the affirmative, then the main question is to be put immediately, and no further debate is permitted.

The previous question being moved and seconded, the question from the chair should be, "Shall the main question be now put?" If the nays prevail the main question remains as the question before the house in the same stage of proceedings as before the previous question was moved.

**EQUIVALENT QUESTIONS.**—Where questions are perfectly equivalent, so that the negative of the one amounts to the affirmative of the other, and leaves no other alternative, the decision of the one necessarily concludes the other. Thus the negative of striking out amounts to the affirmative of agreeing; and, therefore, to put a question on agreeing after that of striking out, would be to put the same question in effect twice over.

**QUESTIONS OF ORDER.**—It is the duty of the chairman to decide all questions of order whenever raised. Upon such questions no debate or discussion is in order, but if the decision is not satisfactory any one may object to it and appeal to the house. On appeal being taken, the question should be: "Shall the decision of the chair stand as the judgment of the house?" Whereupon the question may be debated and discussed the same as any other question.



**COMMITMENT.**—Any measure may be referred to a committee, on motion. This motion stands in the same degree with the previous question and postponement, and, if first made, takes precedence of them. A motion to commit may be amended by the substitution of one kind of committee for another, or by enlarging or diminishing the number of the members of the committee, as originally proposed, or by instructions to the committee.

After a measure has been committed and reported, it should not, in an ordinary course, be recommitted, but in cases of importance, and for special reasons, it is sometimes recommitted, and usually to the same committee.

**RECONSIDERATION.**—When a motion or question shall have been determined, either in the affirmative or negative, it is always in order for anyone who voted with the majority, or in case of a vote equally divided, for one who voted in the negative, to move for a reconsideration thereof. Such motion must be made at the same meeting at which the former vote was taken. A motion to reconsider, being put and lost, cannot be renewed.

**UNDEBATABLE MOTIONS.**—A motion to adjourn, to lay on the table, and a call for the previous question, must be decided without debate. And all incidental questions of order, arising after a motion is made for either of the foregoing questions, must be decided, whether on appeal or otherwise, without debate.

**ORDER IN DEBATE.**—When a person means to speak, he is to stand up in his place, uncovered, and address himself to the chair, who calls him by name, that all may take notice who it is that speaks. A person who is indisposed may be indulged to speak sitting.

When a person rises to speak, no question is to be put, but he is to be heard undisturbed, unless overruled.

If two or more rise to speak nearly together, the chair determines who was first up and calls him by name, whereupon he proceeds, unless he

voluntarily sits down and yields the floor to the other.

No one may speak more than twice to the same question without the consent of the house, except merely to explain himself in some material part of his speech, or to the manner of the words in question, keeping himself to that only and not going into the merits of it.

If the chairman rises to speak, the person standing must sit down, that the chair may be first heard.

No one is to speak impertinently, or beside the question, or to use indecent language against the proceedings of the house. Nor should a person, in speaking, mention another then present by his name, but should describe him by his seat, or as "the gentleman who spoke last," or, "on the other side of the question," etc.

Any one when called to order by another or by the chair, must sit down, and not proceed without leave until the question of order shall have been decided by the chair.

While the presiding officer is addressing the house or putting a question, no one should cross the floor or leave the room; nor while another is speaking, walk between him and the chair.

ADJOURNMENT.—A motion to adjourn is not susceptible of amendment. If it is desirable to adjourn to any particular place or time, this may be accomplished by a previous resolution to that effect.

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### Subterranean Heat

The deepest coal mine in England is at Killingworth, near Newcastle, and the mean annual temperature at 400 yards below the surface is 77 degrees, and at 300 yards 70 degrees, while at the surface it is but 48 degrees, being 1 degree of increase for every 15 yards. This explains the origin of hot springs, for at 3,300 yards the heat would be equal to boiling water, taking 20 yards to a degree. The heat of the Bath waters is 116 degrees, hence they would appear to rise 1,320 yards.

**USEFUL CURES AND REMEDIES****TO MEND RUBBER OVERSHOES.**

Rub the patch and shoe thoroughly with sharp sand paper. Smear both with liquid rubber five times, every time letting them dry. Do this once more, and, before they dry, apply the patch, with pressure if possible, and the boot is mended. If liquid rubber is not obtainable, dissolve small pieces of pure rubber (not vulcanized), in warm spirits of turpentine, to the consistence of sirup.

**TO DRIVE FLIES FROM STABLES.**

Scatter chloride of lime on a board in a stable, to remove all kinds of flies, but more especially biting flies. Sprinkling beds of vegetables with even a weak solution, effectually preserves them from caterpillars, slugs, etc. A paste of one part powdered chloride of lime and a half part of some fatty matter, placed in a narrow band round the trunk of the tree, prevents insects from creeping up it. Even rats, mice, cockroaches, and crickets flee from it.

**TO KEEP FLIES FROM HORSES.**

Procure a bunch of smartweed, and bruise it to cause the juice to exude. Rub the animal thoroughly with the bunch of bruised weed, especially on the legs, neck, and ears. Neither flies nor other insects will trouble him for twenty-four hours. The process should be repeated every day. A very convenient way of using it is, to make a strong infusion by boiling the weed a few minutes in water. When cold it can be conveniently applied with a sponge or brush. Smartweed is found growing in every section of the country, usually on wet ground near highways.

**TO REMOVE THE SMELL OF ONIONS FROM THE BREATH.**

Parsley eaten with vinegar will remove the unpleasant effects of eating onions.

**REMEDY FOR BAD BREATH.**

Bad breath or foul breath will be removed by taking a teaspoonful of the following mixture after each meal: One ounce liquor of potassa; one ounce chloride of soda; one and a half ounces phosphate of soda, and three ounces of water.

## TO EXTERMINATE RED ANTS.

Grease a plate with lard and set it where the insects abound. They prefer lard to anything else, and will forsake sugar for it. Place a few sticks around the plate for the ants to climb up on. Occasionally turn the plate bottom up over the fire, and the ants will fall in with the melting lard. Reset the plate, and in a short time you will catch them all. Powdered borax sprinkled around the infested places will exterminate both red and black ants.

## HOW TO DESTROY BED BUGS.

Rub the bedsteads in the joints with equal parts of spirits of turpentine and kerosene oil, and the cracks of the surbase in the rooms where there are many. Filling up all the cracks with hard soap is an excellent remedy. March and April are the months when bedsteads should be examined to kill all the eggs.

## TO DESTROY BED BUGS IN PAPERED ROOMS.

Clean the paint of the room thoroughly, and set in the center of the room a dish containing four ounces of brimstone. Light it, and close the room as tight as possible, stopping the keyhole of the door with paper, to keep the fumes of the brimstone in the room. Let it remain for three or four hours, then open the windows and air thoroughly. The brimstone will be found to have also bleached the paint, if it was a yellowish white.

## HOW TO REMOVE WARTS.

A daily application of either of the three following remedies is effective in dispersing warts: Touch the wart with a little nitrate of silver, lunar caustic; or with nitric acid or aromatic vinegar. The lunar caustic produces a black, and the nitric acid a yellow stain, which passes off in a short time; the vinegar scarcely discolors the skin. Sparks of frictional electricity, repeated daily, by applying the warts to the conductor of an electrical machine, have been also successfully employed as a cure for these troublesome and unsightly excrescences.



## HOW TO KEEP ICE IN SUMMER.

On exposing a piece of ice weighing, say 25 pounds, to the air at a temperature of 75 degrees, but so placed that it is perfectly drained, it will be found to have scarcely disappeared at the end of twenty-four hours. Wrap the same piece in three or four thicknesses of blanket or flannel, and place it in a small tub exposed to the same temperature, and as the water filters through the blanket the ice will stand in its own water, and will be all dissolved in five or six hours. Wrap the same piece of ice carefully in a blanket, and place it on a grating, or on four crossed sticks, so that no water can accumulate underneath, and at the end of three or even four days it will not have entirely melted.

## TO DESTROY INSECTS IN THE EAR.

Insects may be destroyed by pouring a spoonful of warm olive oil, or camphorated oil, into the ear over night, retaining it there until the next morning by means of a piece of cotton wool, when it may be washed out with a little mild soap and warm water.

## TO PURIFY A SICK-CHAMBER.

The nitrous acid vapor, so invaluable as a disinfectant in contagious fevers, is obtained by decomposing nitre by means of heated sulphuric acid, in the following manner: Put half an ounce sulphuric acid in a crucible glass or china cup and warm it over a lamp or in heated sand, adding to it from time to time a little nitre. Several of these vessels must be placed in the sick chamber and in the neighboring apartments and passages, at a distance of 20 feet or more from each other, according to the height of the ceiling and the virulence of the contagion.

## CURE FOR BONE FELON.

As soon as the disease is felt, put directly over the spot a blister of Spanish fly, about the size of the thumb nail, and let it remain for six hours, at the expiration of which time, directly under surface of the blister will be seen the felon, which can be instantly taken out with the point of a needle or a lancet.

## TO CURE FELONS.

Stir half a teaspoonful of water into one ounce Venice turpentine with a rough stick until the mixture appears like granulated honey. Wrap a good coating of it round the finger with a cloth. If the felon is only recent, the pain will be removed in six hours.

## HOW TO DISPERSE BLACK ANTS.

A few leaves of green wormwood, scattered among the haunts of these troublesome insects, is said to be effectual in dislodging them.

## TO PURIFY WATER IN A CISTERN.

Two ounces of permanganate of potassa thrown in a cistern will render the foulest water sweet and pure.

## HOW TO GET RID OF RATS.

Get a piece of lead pipe and use it as a funnel to introduce about 1½ oz. of sulphide of potassium into any outside holes tenanted by rats; not to be used in dwellings. To get rid of mice use tartar emetic mingled with any favorite food; they will eat, sicken, and take their leave.

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**Duration of Life of Various Animals**

Elephant, 100 years and upward; rhinoceros, 20; camel, 100; lion, 25 to 70; tigers, leopards, jaguars, and hyenas (in confinement), about 25; beaver, 50; deer, 20; wolf, 20; fox, 14 to 16; llamas, 15; chamois, 25; monkeys and baboons, 16 to 18; hare, 8; squirrel, 7; rabbit, 7; swine, 25; stag, under 50; horse, 30; ass, 30; sheep, under 10; cow, 20; ox, 30; swans, parrots, and ravens, 200; eagle, 100; geese, 80; hens and pigeons, 10 to 16; hawks, 30 to 40; crane, 24; blackbird, 10 to 12; peacock, 20; pelican, 40 to 50; thrush, 8 to 10; wren, 2 to 3; nightingale, 15; blackcap, 15; linnet, 14 to 23; goldfinch, 20 to 24; redbreast, 10 to 12; skylark, 10 to 30; titlark, 5 to 6; chaffinch, 20 to 24; starling, 10 to 12; carp, 70 to 150; pike, 30 to 40; salmon, 16; codfish, 14 to 17; eel, 10; crocodile, 100; tortoise, 100 to 200; whale, estimated, 1,000; queen bees live 4 years; drones, 4 months; worker bees, 6 months.

### SOME HOWS AND WHYS

#### *Why Some Beverages Froth or Sparkle.*

When liquors are bottled they contain a certain amount of sugar, which ferments through the action of minute spores or cells; they break the sugar up into alcohol and carbonic acid gas; when the cork is withdrawn the gas instantly makes its escape, and, rising in bubbles, produces effervescence and froth.

#### *Comparative Size of Sun and Earth.*

If the sun were hollow like an air-ball it would take 1,331,000 globes the size of our earth to fill it.

#### *How Rocks Are Cut by Water.*

The Falls of Niagara eat back the cliff at the rate of about one foot a year. In this way a deep cleft has been cut right back from Queentown, for a distance of seven miles, to the place where the falls now are. At this rate it has taken more than 35,000 years for that channel of seven miles to be made.

#### *Why a River Always Appears More Shallow Than It Really Is.*

Because the light proceeding from the bottom of the river is refracted as it emerges out of the water. A river is about one-third deeper than it seems to be. If, therefore, a river seems only  $4\frac{1}{2}$  feet deep, it is actually 6 feet deep. Many persons get out of their depth in bathing in consequence of this deception.

#### *Why a Small Needle Carefully Laid Upon the Surface of Water Will Float.*

Its weight is not sufficient to overcome the cohesion of the particles of water constituting the surface, consequently it cannot pass through them and sink. For the same reason many light insects walk upon the surface of water without sinking or becoming wet.

#### *Why a Railway Train Makes More Noise When It Passes Over a Bridge Than When on Solid Ground.*

The bridge is elastic and vibrates much more from the weight of the train than the solid earth,

in consequence of which it produces more definite sound-waves. The bridge acts as a sounding board and the water or earth below it repeats or echoes the sound.

*Why a Soap Bubble Exhibits a Variety of Colors.*

Because the thickness of the film through which the rays pass is constantly varying.

*Why Water Expands When It Freezes.*

Ice is, really, crystallized water, and during its formation the particles arrange themselves in ranks and lines, which cross each other at angles of 60 and 120 degrees, and consequently occupy more space than when liquid. Cast-iron bomb-shells, thirteen inches in diameter and two inches thick, were filled with water and their apertures or fuse-holes firmly plugged with iron bolts. Upon exposure to a temperature of 19 degrees below zero, at the moment the water froze, the shells burst asunder, demonstrating the enormous interior pressure to which they were subjected by the water assuming its solid shape.

*Why Oil and Water Will not Unite.*

Because there is no affinity between the oil and the water. Affinity is the peculiar disposition which one body has to unite with a different body to the rejection of others which are dissimilar in their properties. In the case of the oil and water, the repulsion is overcome if we add a little potash, the three uniting to form soap.

*Why Waves Are Calmed by Pouring Oil Upon the Water.*

Oil, from its inferior specific gravity, forms a floating film, which defends the surface of the water from contact with the currents of air, and the friction between the wind and the waves is greatly diminished, in the same manner that the friction between solids is by the application of oils.

*Why the Fur of a Cat Crackles When Rubbed with the Hand in Cold Weather.*

Because the friction between the hand and the fur produces an excitation of positive electricity in the hand and negative in the fur, and an inter-



change of the two causes a spark with a slight noise. It is miniature thunder and lightning.

*Why Hot Iron Makes a Hissing Noise When Plunged Into Water.*

The hot iron converts into steam the particles of water which come in contact with it, and as the steam flies upward it passes by other particles of water not yet evaporated; the collision produces very rapid vibrations in the air and a hissing noise is the result.

*Why in Traveling We Experience Less Dust in the Night Time Than During the Day.*

Because the dews of night moisten the dust and prevent its rising in the air, and as the surface of the earth is cooler than the air after sunset the currents of the wind will incline downward and tend rather to press the dust down than to buoy it up.

*Why Two or More Echoes Are Sometimes Heard.*

Because separate reverberating surfaces receive the sound and reflect in succession. At Glasgow is a remarkable echo. If a trumpeter plays a tune and stops, the echo will begin the same tune and repeat it all accurately; as soon as this echo has ceased, another will echo the same tune in lower tone; and after the second echo has ceased, a third will succeed with equal fidelity, though in a much feebler tone. At the Lake of Killarney there is an echo which plays an excellent "second" to any simple tune played on a bugle.

*Why Plaster of Paris Hardens When Moistened with Water.*

Plaster of Paris (calcined plaster), so called because immense beds of it are found in the vicinity of Paris, in which city it was first extensively used as a plaster or cement, is pulverized rock. After being pulverized, it is strongly heated, until it loses one-fifth of its weight by the expulsion of moisture from its composition. When mixed with water, the anhydrous burnt gypsum again chemically combines with it and passes into a solid state.

*How Knowledge of the Velocity of Sound Is Made  
Applicable to the Measurement of Distance.*

Suppose a flash of lightning be perceived, and on counting the seconds that elapse before the report of thunder is heard, we find them to amount to  $3\frac{1}{2}$ ; then, as sound moves 1,142 feet in a second, it will follow that the thunder-cloud must be distant  $1,142 \times 3\frac{1}{2} = 3,997$  feet.

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**Definition of Electrical Units**

**Ohm**—The unit of resistance. The resistance of a column of mercury 106.3 centimeters in length, having an area of cross-section of one square millimeter, at the temperature of ice (32 degrees F. or zero C.).

**Ampere**—The unit of current strength. It is the flow of electricity produced by the pressure of one volt against a resistance of one ohm.

**Volt**—The unit of electromotive force. The pressure required to cause an ampere of current to flow through a resistance of one ohm.

**Coulomb**—The unit of electrical quantity. That quantity of electricity which would pass in one second through a resistance of one ohm with a pressure of one volt.

**Farad**—The unit of electrical capacity. The capacity of a surface which will retain one coulomb of electricity under a charging electromotive force of one volt. This is a capacity so enormous that the micro-farad—one-millionth of a farad—is the unit commonly employed.

**Joule**—The unit of electrical energy or work. The work done, or electrical energy required, in maintaining a current of one ampere for one second through a resistance of one ohm. A watt-second. One joule equals 10,000,000 ergs.

**Watt**—The unit of electric activity or power, equal to one joule per second. The number of watts is numerically equal to the product of the current in amperes, times the voltage which produces that current. One volt times one ampere = one watt = 1.746 horsepower. A kilowatt is 1,000 watts.

### Antidotes to Poisons

In nearly all cases of poisoning the first thing to do is to excite copious vomiting by means of a powerful emetic, the action being promoted by large draughts of lukewarm water, tickling the throat with the finger, etc. If the vomiting can not be brought on by this means the stomach pump must be resorted to, but not till the simple methods have been tried. The vomiting should be kept up by giving albuminous liquids such as milk and water, barley water, or similar substances, always administered when lukewarm. After the vomiting has removed the poisonous substance, a mild aperient draught may be given, and nervous exhaustion allayed by very small doses of ether or ammonia, or draughts of wine or hot spirits and water. Generally speaking, a tablespoonful of the flour of mustard mixed with warm water will serve as an effective emetic. Whenever medical aid is accessible it should be called immediately to a case of poisoning. For special antidotes, we take the following directions from a chemical journal, giving the substances most useful in counteracting the effects of poisonous chemicals: "For phenic, sulphuric, nitric or nitro-muriatic acids, creosote, tincture of iodine, or phosphorus, use the white of an egg well beaten up in water, and a teaspoonful of mustard in warm water. In case sulphuric, nitric, or muriatic acid has been swallowed, it is necessary to take lime mixed with as small a quantity of water as possible. For chromic acid, the chromates and colors that have chromium for a base, the compounds of copper, and such preparations as have antimony for a base (such as tartar emetic), and the compounds of mercury and zinc, use the white of eggs in abundance, and as an emetic, mustard, which, however, is useless if the poisoning has been done by tartar emetic. For ammonia, soda, potassa, the silicates, and the alkaline hydrosulphates, use vinegar, and afterward oil or milk. For prussic acid and its salts, the cyanides of potassium and mercury, the sul-

phocyanides, oil of bitter almonds, or nitrobenzine, pour water on the patient's head or spinal column, and put mustard plasters on the feet and the stomach. Do not let the patient go to sleep. For ether, petroleum, benzole, fruit essences, and concentrated alcohol, take strong mustard as an emetic, with much warm water, cold baths, and fresh air. Keep the patient awake. For the compounds of baryta or lead, use mustard as an emetic, with warm water, Epsom salts or Glauber's salts in water. For arsenic and its compounds, use mustard and dialyzed iron with magnesia, and afterward oil, mild, or mucilaginous liquids. For oxalic acid and its salts, use lime or lime water, and afterward castor oil. For nitrate of silver, use kitchen salt dissolved in water, and mustard as an emetic. For the nitrous fumes from the manufacture of the nitrate of iron, or of sulphuric acid, take acetic acid as strong as can be endured, in small quantities at a time."

### Effect of Heat on Various Substances

|                      | Deg.     |                        | Deg.      |
|----------------------|----------|------------------------|-----------|
| Antimony melts at... | 951.     | Zinc melts at.....     | 740.      |
| Bismuth        "     | ... 476. | Ice        "           | ..... 32. |
| Brass         "      | ...1900. | Mercury boils at....   | 662.      |
| Copper        "      | ...2548. | Naphtha   "            | .....186. |
| Glass         "      | ...2377. | Fresh water boils at.. | 212.      |
| Gold          "      | ...2590. | Sea water   "          | ..213.2   |
| Cast Iron     "      | ...3479. | Ether       "          | ..100. .  |
| Lead          "      | ... 594. | Oil Turpentine boils   |           |
| Platinum     "       | ...3080. | at .....               | 304.      |
| Silver        "      | ...1250. | Linseed Oil boils at.. | 640.      |
| Steel         "      | ...2500. | Sweet Oil   "          | ..412.    |
| Tin          "       | ... 421. |                        |           |

### Melting Temperature of Alloys

|                                                  | deg. |
|--------------------------------------------------|------|
| Lead 1, Tin 1, Bismuth 4, Cadmium 1, melts at... | 155  |
| Lead 3, Tin 5, Bismuth 8,                        | 208  |
| Lead 1, Tin 3, Bismuth 5,                        | 212  |
| Lead 1, Tin 4, Bismuth 5,                        | 240  |
| Tin 1, Bismuth 1,                                | 286  |
| Lead 2, Tin 3,                                   | 334  |
| Tin, 2, Bismuth 1,                               | 336  |
| Lead 1, Tin 2,                                   | 360  |
| Tin 8, Bismuth 1,                                | 392  |
| Lead 2, Tin 1,                                   | 475  |



**The Jewish Religion—Observances, Etc.**

In their religious observances modern Jews adhere to the rules of the Mosaic dispensation. Their service consists chiefly in reading the law in their synagogues, together with a variety of prayers. They abstain from the meats prohibited by the Levitical law, and they continue to observe the ceremonies of the Passover, as nearly as possible. They offer prayers for the dead, because they believe that the souls of the wicked go to a place of temporary punishment, where they remain under trial a year, and they think that very few will be condemned to suffer eternally. We give a summary of the confession of faith, in which all orthodox Jews must live and die. It is made up of thirteen articles, and was drawn up in the eleventh century by a celebrated rabbi named Maimonides. These articles declare in substance: (1) That there is one God, creator of all things, who may exist without any part of the universe, but without whom nothing can maintain existence; (2) that God is uncompounded and indivisible, but different from all other unities; (3) that God is an immaterial being, without any admixture of corporeal substance; (4) that God is eternal, but everything else had a beginning in time; (5) that God alone ought to be worshiped, without mediators or intercessors; (6) that there have been inspired prophets, and may be more; (7) that Moses was the grandest prophet that ever appeared; (8) that the law of Moses was, in every syllable, dictated by the Almighty, not only in its written letter but in traditionary exposition; (9) that this law is immutable, neither to be added to nor diminished; (10) that God knows all our actions and governs them as He will; (11) that the observance of the law is rewarded and its violation punished in this world, but in a greater degree in the next; (12) that a Messiah is yet to appear, the time of whose coming may not be prescribed or foretold; and (13) that God will raise the dead at the last day and pass judgment upon all.

### To Compute the Volume of Square Timber

When all the dimensions are in feet, multiply the breadth, depth, and length together, and the product will give the volume in cubic feet.

When one of the dimensions is given in inches, multiply as before, and divide the product by 12.

When any two of the dimensions are given in inches, multiply as before, and divide by 144.

Example.—A piece of timber is 15 inches square, and 20 feet in length; required, its volume in cubic feet:

$$15 \times 15 \times 20 = 4,500, \text{ and } 4,500 \div 144 = 31.25 \text{ feet.}$$

### Board and Timber Measure

Rule.—Multiply the length by the breadth, and the product will give the surface required.

If the dimensions are given in inches, multiply as above, and divide by 12. When all the dimensions are in inches, multiply as before, and divide the product by 144.

Example.—What are the number of square feet in a board 15 feet in length and 16 inches in width?

$$15 \times 16 = 240, \text{ and } 240 \div 12 = 20 \text{ feet.}$$

### Relative Hardness of Woods

Taking shellbark hickory as the highest standard of our forest trees, and calling that 100, other trees will compare with it for hardness as follows:

|                     |     |                    |    |
|---------------------|-----|--------------------|----|
| Shellbark hickory.. | 100 | Yellow oak.....    | 69 |
| Pignut hickory..... | 96  | White elm.....     | 58 |
| White oak.....      | 84  | Hard maple.....    | 56 |
| White ash.....      | 77  | Red cedar.....     | 56 |
| Dogwood .....       | 75  | Wild cherry.....   | 55 |
| Scrub oak.....      | 73  | Yellow pine.....   | 54 |
| White hazel.....    | 72  | Chestnut .....     | 52 |
| Apple tree.....     | 70  | Yellow poplar..... | 51 |
| Red oak.....        | 69  | Butternut .....    | 43 |
| White beech.....    | 65  | White birch.....   | 43 |
| Black walnut.....   | 65  | White pine.....    | 30 |
| Black birch.....    | 62  |                    |    |

**TABLES OF WEIGHTS AND MEASURES****CUBIC MEASURE.**

1,728 cubic inches 1 cubic foot, 27 cubic feet 1 cubic yard, 128 cubic feet 1 cord (wood), 40 cubic feet 1 ton (shipping), 2,150.42 cubic inches 1 standard bushel, 268.8 cubic inches 1 standard gallon, 1 cubic foot four-fifths of a bushel.

**SURVEYOR'S MEASURE.**

7.92 inches 1 link, 25 links 1 rod, 4 rods 1 chain, 10 square chains or 160 square rods 1 acre, 640 acres, 1 square mile.

**LONG MEASURE—DISTANCE.**

3 barleycorns 1 inch, 12 inches 1 foot, 3 feet 1 yard,  $5\frac{1}{2}$  yards 1 rod, 40 rods 1 furlong, 8 furlongs 1 mile.

**DRY MEASURE.**

2 pints make 1 quart, 8 quarts make 1 peck, 4 pecks make 1 bushel, 36 bushels make 1 chaldron.

**LIQUID MEASURE.**

4 gills make 1 pint, 2 pints make 1 quart, 4 quarts make 1 gallon,  $31\frac{1}{2}$  gallons make 1 barrel, 2 barrels make 1 hogshead.

**APOTHECARIES' WEIGHT.**

20 grains make 1 scruple, 3 scruples make 1 drachm, 8 drachms make 1 ounce, 12 ounces make 1 pound.

**TROY WEIGHT.**

24 grains make 1 pennyweight, 20 pennyweight make 1 ounce. By this weight gold, silver and jewels only are weighed. The ounce and pound in this are same as in apothecaries' weight.

**AVOIRDUPOIS WEIGHT.**

16 drachms make 1 ounce, 16 ounces make 1 pound, 25 pounds make 1 quarter, 4 quarters make 1 hundredweight, 2,000 pounds make 1 ton.

**CIRCULAR MEASURE.**

60 seconds make 1 minute, 60 minutes make 1 degree, 30 degrees make 1 sign, 90 degrees make 1 quadrant, 4 quadrants or 360 degrees make 1 circle.

## TIME MEASURE.

60 seconds make 1 minute, 60 minutes make 1 hour, 24 hours make 1 day, 7 days make 1 week, 4 weeks make 1 lunar month, 28, 29, 30, or 31 days make 1 calendar month (30 days make 1 month in computing interest), 52 weeks and 1 day, or 12 calendar months, make 1 year, 365 days, 5 hours, 48 minutes, and 49 seconds make 1 solar year.

## SQUARE MEASURE.

144 square inches 1 square foot, 9 square feet 1 square yard,  $30\frac{1}{4}$  square yards 1 square rod, 40 square rods 1 rood, 4 roods 1 acre, 640 acres 1 square mile or section, 36 sections 1 township.

## CLOTH MEASURE.

$2\frac{1}{4}$  inches 1 nail, 4 nails 1 quarter, 4 quarters 1 yard.

## MISCELLANEOUS.

3 inches 1 palm, 4 inches 1 hand, 6 inches 1 span, 18 inches 1 cubit, 21.8 inches 1 Bible cubit,  $2\frac{1}{2}$  feet 1 military pace.

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### What Constitutes an Acre

A lot of any of the following dimensions measures one acre:

|         |   |                          |          |   |                          |
|---------|---|--------------------------|----------|---|--------------------------|
| 5 yards | × | 968 yards.               | 220 feet | × | 198 feet.                |
| 10 "    | × | 484 "                    | 440 "    | × | 99 "                     |
| 40 "    | × | 121 "                    | 110 "    | × | 396 "                    |
| 80 "    | × | 60 $1\frac{1}{2}$ yards. | 240 "    | × | 181 $1\frac{1}{2}$ feet. |
| 70 "    | × | 69 $1\frac{1}{7}$ "      |          |   |                          |

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### Time at Which Money Doubles at Interest

| Rate per cent. | Simple Interest.             | Compound Interest. |
|----------------|------------------------------|--------------------|
| 10             | .....10 years.               | 7 years 100 days.  |
| 9              | .....11 years 40 days.       | 8 years 16 days.   |
| 8              | .....12 $\frac{1}{2}$ years. | 9 years 2 days.    |
| 7              | .....14 years 104 days.      | 10 years 89 days.  |
| 6              | .....16 years 8 months.      | 11 years 327 days. |
| 5              | .....20 years.               | 15 years 75 days.  |
| $4\frac{1}{2}$ | .....22 years 81 days.       | 15 years 273 days. |
| 4              | .....25 years.               | 17 years 246 days. |
| $3\frac{1}{2}$ | .....28 years 208 days.      | 20 years 54 days.  |
| 3              | .....33 years 4 months.      | 23 years 164 days. |
| $2\frac{1}{2}$ | .....40 years.               | 28 years 26 days.  |
| 2              | .....50 years.               | 35 years 1 day.    |



## PRACTICAL CALCULATIONS

## GRAIN MEASURE.

To find the capacity of a bin or wagon-bed multiply the cubic feet by .8 (tenths). For great accuracy, add  $\frac{1}{3}$  of a bushel for every 100 cubic feet.

To find the cubic feet, multiply the length, width, and depth together.

## EAR CORN MEASURE.

To find the contents of a corn crib, multiply the cubic feet by 4 and divide the product by 9.

## CISTERN MEASURE.

To find the capacity of a round cistern or tank multiply the square of the average diameter by the depth, and take 3-16 of the product. For great accuracy, multiply by .1865 instead of taking 3-16.

For square cisterns or tanks multiply the cubic feet by  $.2\frac{3}{8}$  (tenths).

## LAND MEASURE.

To find the number of acres in a body of land multiply the length by the width (in rods), and divide the product by 160. When the opposite sides are unequal, add them, and take half the sum, for the mean length or width.

## TABLES CONVENIENT FOR TAKING INSIDE DIMENSIONS.

A box 24 in. x 24 in. x 14.7 will hold a barrel of  $31\frac{1}{2}$  gallons.

A box 15 in. x 14 in. x 11 in. will hold 10 gallons.

A box  $8\frac{1}{4}$  in. x 7 in. x 4 in. will hold a gallon.

A box 4 in. x 4 in. x 3.6 in. will hold a quart.

A box 24 in. x 28 in. x 16 in. will hold five bushels.

A box 16 in. x 12 in. x 11.2 in. will hold a bushel.

A box 12 in. x 11.2 in. x 8 in. will hold a half bushel.

A box 7 in. x 6.4 in. x 12 in. will hold a peck.

A box 8.4 in. x 8 in. x 4 in. will hold a peck, or four dry quarts.

A box 6 in. x  $5\frac{3}{5}$  in., and 4 in. deep will hold a half gallon.

A box 4 in. x 4 in., and 21-10 deep will hold a pint.

TO FIND THE CONTENTS OF A CORN CRIB.

Multiply the number of cubic feet by  $4\frac{1}{2}$  and point off one decimal place; the result will be the answer in bushels.

#### HAY MEASURE.

About 500 cubic feet of well-settled hay, or about 700 of new mown hay, will make a ton. To estimate amount of hay in mow—Ten cubic yards of meadow hay weigh a ton. When hay is taken out of old stacks, 8 or 9 yards will make a ton. Eleven or twelve cubic yards of clover, when dry, make a ton.

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#### USEFUL RECIPES

One of the best varnishes for smoke-stacks or steam-pipes is good asphaltum dissolved in oil of turpentine.

Oxalic acid dissolved in soft water, say half an ounce to a pint, is one of the best known means for cleaning and brightening brass work.

Iron or steel immersed warm in a solution of carbonate of soda (washing soda) for a few minutes will not rust.

Eighty parts of sifted cast iron turnings, two parts of powdered sal-ammoniac, and one part sulphur, made into a thick paste with water and mixed fresh for use, makes a good cement for stopping holes in castings.

Put pure olive oil into a clear glass bottle with strips of sheet lead and expose it to the sun for two or three weeks, then pour off the clear oil and the result is a lubricant which will neither gum nor corrode. It is used for watches and fine machinery of all kinds.

Cement for Joints.—Paris white, ground, four pounds; litharge, ground, ten pounds; yellow ochre, fine, half a pound; half ounce of hemp, cut short; mix well together with linseed oil to a stiff putty. This cement is good for joints on steam or water pipes. It will set under water.

**FACTS OF VALUE TO HOUSEKEEPERS**

A little quicklime placed in the infested places will drive away any kind of ants.

How to Make Leather Waterproof.—Saturate it with castor oil.

A good cement for glass is made by dissolving an ounce of isinglass in 2 wine glasses of spirits of wine.

How to Remove Clinkers from Stove or Fire-brick.—Put in about half a peck of oyster shells on top of a bright fire. This may need repeating.

How to Remove Tar from Cloth.—Rub it well with turpentine, and every trace of tar will be removed.

How to Remove Egg Stains from Spoons.—Rub with common salt.

How to Remove the Stains of Fruit from the Hands.—Wash your hands in clear water, dry slightly, and while yet moist, strike a sulphur match and hold your hands around the flame. The stains will immediately disappear.

How to Clean Furniture.—Rub with cotton waste, dipped in boiled linseed oil; then rub clean and dry with a soft flannel cloth.

How to Test Whether an Article Is Gilt or Made of a Gold-Colored Alloy.—A solution of bichloride of copper makes a brown spot on alloy, but produces no effect on a surface of gold.

How to Restore Gilt Frames.—Rub with a sponge moistened in turpentine.

How to Clean Gloves.—Pour a little benzine into a basin and wash the gloves in it, rubbing and squeezing them until clean. If much soiled, they must be washed through clean benzine, and rinsed in a fresh supply. Hang up in the air to dry.

How to Clean Hair Brushes.—Dissolve a little soda in warm water, and pour in a small amount of ammonia. Hold the brushes with the bristles downward, and avoid wetting the back as far as possible; shake until the grease is removed. Then rinse in cold water, and put in the air to dry.

How to Clean Hair.—Wash well with a mixture

of soft water, 1 pint, sal-soda, 1 ounce, cream tartar,  $\frac{1}{4}$  ounce.

**How to Remove Iron Rust and Ink Stains.**—Rub lemon juice on the stain, then cover it with salt and lay the articles in the sun. If necessary repeat the process two or three times. Spots from most kinds of ink are similarly taken out. Vinegar will sometimes do it.

**How to Remove Stains from Linen.**—Wet the part stained, and lay on it some salt of wormwood; then rub without diluting it with more water.

**How to Clean Marble.**—Take 2 parts of common soda, 1 part of pumice-stone, and 1 part of finely powdered chalk; sift it through a fine sieve, and mix it with water; then rub it well all over the marble, and the stains will be removed; wash with salt and water.

**How to Remove Mildew from Cloth.**—Put a teaspoonful of chloride of lime into a quart of water, strain it twice, then dip the mildewed places in this weak solution; lay in the sun. If the mildew has not disappeared when dry, repeat.

**How to Cure Mosquito Bites.**—Put 10 drops of refined carbolic acid into an ounce of rose water; shake well, and apply as needed. If you hold your breath when a mosquito has its bill in you it cannot withdraw it until you breathe again.

**How to Get Rid of Moths.**—Sprinkle furniture and cushions thoroughly with benzine. It will not spot or injure the most delicate fabric, but it is sure death to moths. The work must be done in a place where there is neither a fire nor a lighted lamp, for the benzine is very explosive.

**How to Remove Oil or Grease Spots from Carpets.**—Lay a piece of blotting paper over the spot, and set a flat-iron on top, the iron just hot enough not to scorch. Change the paper as often as it becomes greasy. After most of the oil has been extracted, apply whiting; leave it on for a day or two, then brush off.

**How to Remove Paint from Dress Goods.**—When the color of a fabric has been destroyed



by an acid, ammonia is applied to neutralize the same; after which an application of chloroform will, in almost all cases, restore the original color.

**How to Color Dress Goods Red.**—One ounce of cochineal, 1 ounce of muriate of tin, and a little cream of tartar for each pound of goods, dissolved in enough water to cover them. Boil the goods in this dye 10 minutes. Hang up to dry.

**How to Remove a Rusty Screw.**—Apply a red-hot iron to the head for a short time, the screw-driver being applied immediately while the screw is hot.

**How to Clean Silverware.**—When it wants polish rub it with whiting on chamois skin.

**How to Prevent Starch from Souring When Boiled.**—Add a little sulphate of copper.

**How to Raise the Pile on Velvet.**—Cover a hot iron with a wet cloth, and hold the velvet over it. Brush it quickly while damp.

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### **Remarkable Rainstorms**

A continual rain in Scotland for five months, 918; a violent one in London, 1222; again, 1233; so violent, the harvest did not begin until Michaelmas, 1330; so heavy that the corn was spoiled, 1335; from the beginning of October to December, 1338; from midsummer to Christmas, so that there was not one day or night dry together, 1348; in Wales, which destroyed 10,000 sheep, September 19, 1752; in Languedoc, which destroyed the village of Bar le Duc, April 26, 1776; in the island of Cuba, June 21, 1791, when 3,000 persons and 11,700 cattle perished.

---

### **Fifteen Largest Cities of the World**

The fifteen largest cities of the world are as follows, in this order: (1) London; (2) New York; (3) Berlin; (4) Paris; (5) Chicago; (6) Tokyo; (7) Petrograd; (8) Vienna; (9) Moscow; (10) Philadelphia; (11) Buenos Aires; (12) Osaka; (13) Constantinople; (14) Rio de Janeiro; (15) Calcutta. See table elsewhere in this work for populations.

### Thermometers Compared

There are three kinds of thermometers—Fahrenheit, Reaumur and Centigrade, the Fahrenheit being in general use in the United States. The freezing and boiling points on the scales compare as follows:

| Thermometer.     | Freezing pt. | Boiling pt. |
|------------------|--------------|-------------|
| Fahrenheit ..... | 32 degrees   | 212 degrees |
| Reaumur .....    | zero         | 80 degrees  |
| Centigrade ..... | zero         | 100 degrees |

The degrees on one scale are reduced to their equivalents on another by these formulas:

Fahrenheit to Reaumur—Subtract 32, multiply by four-ninths.

Fahrenheit to Centigrade—Subtract 32, multiply by five-ninths.

Reaumur to Fahrenheit—Multiply by nine-fourths, add 32.

Reaumur to Centigrade—Multiply by five-fourths.

Centigrade to Fahrenheit—Multiply by nine-fourths, add 32.

Centigrade to Reaumur—Multiply by four-fifths.

### How to Tell the Weather with Aneroid Barometers

**A RISING BAROMETER.**—A gradual rise indicates settled weather. A rapid rise indicates unsettled weather. A rise with dry air and cold increasing in summer indicates wind from the northward; and if rain has fallen, better weather may be expected. A rise with moist air and a low temperature indicates wind and rain from the northward. A rise with southerly winds indicates fine weather.

**A STEADY BAROMETER.**—With dry air and seasonable temperature indicates continuance of very fine weather.

**A FALLING BAROMETER.**—A rapid fall with westerly wind indicates stormy weather from the northward. A rapid fall indicates stormy weather. A fall with a northerly wind indicates storm,

with rain and hail in summer, and snow in winter. A fall with increased moisture in the air, and heat increasing, indicates wind and rain from the southward. A fall with dry air and cold increasing in winter indicates snow. A fall after very calm and warm weather indicates rain with squally weather. The barometer rises for northerly winds, for dry, or less wet weather, for less wind, or for more than one of these changes, except on a few occasions when rain, hail, or snow comes from the northward with strong wind. The barometer falls for southerly wind, for wet weather, for stronger wind or for moderate wind, with rain and snow, from the north.

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### **An Island That Floats**

One of the most picturesque and remarkable bodies of water in the world is Henry's Lake, in Idaho. It is situated on the dome of the continent in a depression in the Rocky Mountains called Targee's Pass. It has an area of forty square miles, and all around it rise snow-capped peaks, some of them being the highest of the continent's backbone. In the lake is a floating island about 300 feet in diameter. It has for its basis a mat of roots so dense that it supports large trees and a heavy growth of underbrush. These roots are covered with several feet of rich soil. The surface is solid enough to support the weight of a horse anywhere, and there are places where a house could be built. The wind blows the island about the lake, and it seldom remains twenty-four hours in the same place.

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### **Periods of Gestation**

In the horse and ass are about the same, or 11 months each, camel 12 months, elephant 2 years, lion 5 months, buffalo 12 months, in the human female 9 months, cow 9 months, sheep 5 months, dog 9 weeks, cat 8 weeks, sow 16 weeks, she wolf from 90 to 95 days. The goose sits 30 days, swans 42, hens 21, ducks 30, peahens and turkeys 28, canaries 14, pigeons 14, parrots 40.

# **Time in Various Parts of the World When It Is Noon at Washington, D. C.**

|                     |            |                     |            |
|---------------------|------------|---------------------|------------|
| Alaska .....        | 7:23 a.m.  | Louisville, Ky....  | 11:26 a.m. |
| Albany .....        | 12:13 p.m. | Macon, Ga.....      | 11:37 a.m. |
| Amsterdam, Hol.     | 2:58 p.m.  | Melbourne, Aus...   | 2:48 a.m.  |
| Angra, India....    | 3:19 p.m.  | Memphis, Tenn...    | 11:08 a.m. |
| Atchison, Kas...    | 10:47 a.m. | Meridian, Miss...   | 11:14 a.m. |
| Athens, Greece..    | 6:43 p.m.  | Mexico .....        | 10:32 a.m. |
| Atlanta, Ga.....    | 11:40 a.m. | Milwaukee .....     | 11:16 a.m. |
| Augusta, Me....     | 12:29 p.m. | Minneapolis, Minn.  | 10:55 a.m. |
| Baltimore .....     | 12:02 p.m. | Mobile, Ala.....    | 11:16 a.m. |
| Bath, Me.....       | 12:29 p.m. | Monoton, N. B...    | 12:48 p.m. |
| Berlin, Germany.    | 6:02 p.m.  | Montreal, Canada.   | 12:14 p.m. |
| Bombay, India..     | 10:00 p.m. | Moscow, Russia..    | 7:38 p.m.  |
| Boston .....        | 12:24 p.m. | Nashville, Tenn..   | 11:21 a.m. |
| Brussels, Belg'm.   | 5:25 p.m.  | New Orleans....     | 11:08 a.m. |
| Buffalo, N. Y...    | 11:52 a.m. | New York.....       | 12:12 p.m. |
| Cape Town, Afr.     | 6:22 p.m.  | Omaha, Neb.....     | 10:44 a.m. |
| Cairo, Egypt....    | 7:13 p.m.  | Ottawa, Canada..    | 12:05 p.m. |
| Calcutta, India..   | 11:01 p.m. | Panama, C. A....    | 11:50 a.m. |
| Canton, China...    | 12:41 a.m. | Paris, France....   | 5:17 p.m.  |
| Cambridge, Mass.    | 12:29 p.m. | Pensacola, Fla...   | 11:19 a.m. |
| Charleston, S. C.   | 11:43 a.m. | Philadelphia ....   | 12:07 p.m. |
| Chicago .....       | 11:17 a.m. | Pittsburg, Pa....   | 11:48 a.m. |
| Cincinnati .....    | 11:30 a.m. | Port Huron, Mich.   | 11:34 a.m. |
| Cleveland, O....    | 11:41 a.m. | Portland, Me....    | 12:27 p.m. |
| Columbus, S. C..    | 11:44 a.m. | Portland, Ore....   | 8:56 a.m.  |
| Constantinople ..   | 7:04 p.m.  | Portsmouth, Va..    | 12:03 p.m. |
| Danville, Va....    | 11:50 a.m. | Providence, R. I.   | 12:22 p.m. |
| Denver, Colo....    | 10:08 a.m. | Quebec, Canada..    | 12:23 p.m. |
| Des Moines, Ia...   | 10:53 a.m. | Quincy, Ill.....    | 11:07 a.m. |
| Detroit, Mich...    | 11:36 a.m. | Raleigh, N. C....   | 11:50 a.m. |
| Dubuque, Iowa...    | 11:05 a.m. | Richmond, Va....    | 11:58 a.m. |
| Dublin, Ireland..   | 4:43 p.m.  | Rio Janeiro, Brazil | 2:15 p.m.  |
| Edinburgh, Scot.    | 4:55 p.m.  | Rome, Italy.....    | 5:58 p.m.  |
| Galveston, Tex...   | 10:49 a.m. | Rome, Ga.....       | 11:32 a.m. |
| Halifax, N. S...    | 12:54 p.m. | San Francisco....   | 8:58 a.m.  |
| Hamilton, Ont...    | 11:49 a.m. | Salt Lake City...   | 9:40 a.m.  |
| Hannibal, Mo...     | 11:07 a.m. | Savannah, Ga....    | 11:44 a.m. |
| Hartford, Conn..    | 12:17 p.m. | Selma, Ala.....     | 11:20 a.m. |
| Havana, Cuba...     | 11:38 a.m. | Sioux City, Iowa.   | 10:42 a.m. |
| Houston, Texas...   | 10:44 a.m. | St. John, N. B...   | 12:44 p.m. |
| Indianapolis ...    | 11:24 a.m. | St. Johns', N. F..  | 1:37 p.m.  |
| Jacksonville, Ill.  | 11:07 a.m. | St. Joseph, Mo...   | 10:50 a.m. |
| Jefferson City, Mo. | 10:59 a.m. | St. Louis.....      | 11:07 a.m. |
| Kalama, Wash...     | 8:58 a.m.  | St. Paul, Minn...   | 10:56 a.m. |
| Kansas City, Mo.    | 10:49 a.m. | Terre Haute, Ind.   | 11:18 a.m. |
| Key West, Fla...    | 11:41 a.m. | Toronto, Canada.    | 11:51 a.m. |
| Knoxville, Tenn.    | 11:32 a.m. | Vera Cruz, Mex...   | 10:43 a.m. |
| Laramie, Wyo...     | 10:12 a.m. | Vicksburg, Miss...  | 11:05 a.m. |
| Leavenworth, Ks.    | 10:49 a.m. | Virginia City, Nev. | 9:40 a.m.  |
| Lisbon, Portugal.   | 4:31 p.m.  | Wheeling, W. Va.    | 11:45 a.m. |
| Lincoln, Neb....    | 10:41 a.m. | Wilmington, N.C.    | 11:58 a.m. |
| Little Rock, Ark.   | 10:59 a.m. | Yankton, S. D....   | 10:38 a.m. |
| London, England.    | 5:08 p.m.  |                     |            |



**How to Tell Any Person's Age**

There is a great deal of amusement in the following magical table. It will enable you to tell how old the young ladies are. Just hand this table to a young lady, and request her to tell you in which column or columns her age is contained. Add together the figures at the top of the columns in which her age is found, and you have the great secret.

|    |    |    |    |    |    |
|----|----|----|----|----|----|
| 1  | 2  | 4  | 8  | 16 | 32 |
| 3  | 3  | 5  | 9  | 17 | 33 |
| 5  | 6  | 6  | 10 | 18 | 34 |
| 7  | 7  | 7  | 11 | 19 | 35 |
| 9  | 10 | 12 | 12 | 20 | 36 |
| 11 | 11 | 13 | 13 | 21 | 37 |
| 13 | 14 | 14 | 14 | 22 | 38 |
| 15 | 15 | 15 | 15 | 23 | 39 |
| 17 | 18 | 20 | 24 | 24 | 40 |
| 19 | 19 | 21 | 25 | 25 | 41 |
| 21 | 22 | 22 | 26 | 26 | 42 |
| 23 | 23 | 23 | 27 | 27 | 43 |
| 25 | 26 | 28 | 28 | 28 | 44 |
| 27 | 27 | 29 | 29 | 29 | 45 |
| 29 | 30 | 30 | 30 | 30 | 46 |
| 31 | 31 | 31 | 31 | 31 | 47 |
| 33 | 34 | 36 | 40 | 48 | 48 |
| 35 | 35 | 37 | 41 | 49 | 49 |
| 37 | 38 | 38 | 42 | 50 | 50 |
| 39 | 39 | 39 | 43 | 51 | 51 |
| 41 | 42 | 44 | 44 | 52 | 52 |
| 43 | 43 | 45 | 45 | 53 | 53 |
| 45 | 46 | 46 | 46 | 54 | 54 |
| 47 | 47 | 47 | 47 | 55 | 55 |
| 49 | 50 | 52 | 56 | 56 | 56 |
| 51 | 51 | 53 | 57 | 57 | 57 |
| 53 | 54 | 54 | 58 | 58 | 58 |
| 55 | 55 | 55 | 59 | 59 | 59 |
| 57 | 58 | 60 | 60 | 60 | 60 |
| 59 | 59 | 61 | 61 | 61 | 61 |
| 61 | 62 | 62 | 62 | 62 | 62 |
| 63 | 63 | 63 | 63 | 63 | 63 |

## Language of Flowers

| FLOWERS.                | SENTIMENTS.                   |
|-------------------------|-------------------------------|
| Acacia .....            | Concealed love.               |
| Almond .....            | Hope.                         |
| Apple-Blossom .....     | Preference.                   |
| Arbutus, Trailing.....  | Welcome.                      |
| Bell Flower.....        | Gratitude.                    |
| Box .....               | Constancy.                    |
| Calla Lily.....         | Feminine beauty.              |
| Cedar .....             | I live for thee.              |
| China Aster.....        | I will think of it.           |
| Chrysanthemum, Rose..   | I love.                       |
| Clover, Red.....        | Industry.                     |
| Corn .....              | Riches.                       |
| Cowslip, American.....  | You are my divinity.          |
| Daffodil .....          | Chivalry.                     |
| Dahlia .....            | Forever thine.                |
| Daisy, Garden.....      | I partake your sentiments.    |
| Daisy, White.....       | Innocence.                    |
| Daisy, Wild.....        | I will think of it.           |
| Elm, American.....      | Patriotism.                   |
| Forget-me-not .....     | True love.                    |
| Fuchsia, Scarlet.....   | Taste.                        |
| Geranium, Apple.....    | Present preference.           |
| Geranium, Ivy.....      | Your hand for the next dance. |
| Geranium, Rose.....     | Preference.                   |
| Gillyflower .....       | Lasting beauty.               |
| Golden Rod.....         | Encouragement.                |
| Hawthorn .....          | Hope.                         |
| Heliotrope, Peruvian... | I love you; Devotion.         |
| Honeysuckle .....       | Bond of love.                 |
| Horse-chestnut .....    | Luxury.                       |
| Hyacinth .....          | Jealousy.                     |
| Mint .....              | Virtue.                       |
| Morning Glory.....      | Coquetry.                     |
| Myrtle .....            | Love.                         |
| Oats .....              | Music.                        |
| Orange .....            | Generosity.                   |
| Pansy .....             | Think of me.                  |
| Pink .....              | Pure affection.               |
| Pink, Red.....          | Pure, ardent love.            |
| Rose, Moss.....         | Superior merit.               |
| Rose, Tea.....          | Always lovely.                |
| Rose, White.....        | I am worthy of you.           |
| Snowball .....          | Winter.                       |
| Tuberose .....          | Dangerous pleasures.          |
| Verbena .....           | Sensibility.                  |
| Violet, Blue.....       | Love.                         |
| Violet, White.....      | Modesty.                      |

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**Oldest Church in the United States**

The Church of San Miguel was erected at Santa Fe, New Mexico, seven years before the landing of the Pilgrims on Plymouth Rock, and fifty-three years after the landing of Columbus.

**FACTS ABOUT FOOD**

Average time required for the digestion of various articles of food:

|                                     | H | M  |                                        | H | M  |
|-------------------------------------|---|----|----------------------------------------|---|----|
| Apples, sweet (boiled).....         | 2 | 30 | Milk (raw).....                        | 2 | 15 |
| Barley, boiled.....                 | 2 |    | Milk (boiled).....                     | 2 |    |
| Beans, Lima (boiled).....           | 2 | 30 | Mutton (boiled).....                   | 3 |    |
| Beef (roasted).....                 | 3 |    | Mutton (roast).....                    | 3 | 15 |
| Beef (fried).....                   | 4 |    | Oysters (roast).....                   | 3 | 15 |
| Beef, salt (boiled).....            | 2 | 45 | Oysters (stewed).....                  | 3 | 30 |
| Bread .....                         | 3 | 30 | Pigs' feet, soused<br>(boiled) .....   | 1 |    |
| Butter .....                        | 3 | 30 | Potatoes (baked).....                  | 2 | 30 |
| Cheese .....                        | 3 | 30 | Pork, salt (stewed)....                | 3 |    |
| Chicken (fricasseed).....           | 2 | 40 | Pork (roast).....                      | 3 | 15 |
| Custard (baked).....                | 2 | 45 | Rice (boiled).....                     | 1 |    |
| Duck (roasted).....                 | 4 |    | Sago (boiled).....                     | 1 | 45 |
| Eggs (raw).....                     |   |    | Soup, barley.....                      | 1 | 30 |
| Eggs (soft boiled)....              | 3 |    | Soup, chicken, etc.<br>(average) ..... | 3 | 15 |
| Eggs (hard boiled)....              | 3 | 30 | Tripe, soused (boiled).....            | 1 |    |
| Eggs (fried).....                   | 3 | 30 | Turkey (roast).....                    | 2 | 20 |
| Fish .....                          | 2 | 44 | Veal (boiled).....                     | 4 |    |
| Fowl (roast).....                   | 4 |    | Veal (fried).....                      | 4 | 30 |
| Hashed meat & vege-<br>tables ..... | 2 | 30 |                                        |   |    |
| Lamb (boiled).....                  | 2 | 30 |                                        |   |    |

**Fat, Water, and Muscle Properties**

| 100 parts.          | W    | M    | F    | 100 parts.      | W    | M    | F     |
|---------------------|------|------|------|-----------------|------|------|-------|
| Cucumbers ...       | 97.0 | 1.5  | 1.0  | Mutton .....    | 44.0 | 12.5 | 40.0  |
| Turnips .....       | 94.4 | 1.1  | 4.0  | Pork .....      | 38.5 | 10.0 | 50.0  |
| Cabbage .....       | 90.0 | 4.0  | 5.0  | Beans .....     | 14.8 | 24.0 | 57.7  |
| Milk, cow's...86.0  | 5.0  | 8.0  |      | Buckwheat .14.2 | 8.6  | 75.4 |       |
| Apples .....        | 84.0 | 5.0  | 10.0 | Barley .....    | 14.0 | 15.0 | 68.8  |
| Eggs, yoke of.79.0  | 15.0 | 27.0 |      | Corn .....      | 14.0 | 12.0 | 73.0  |
| Potatoes .....      | 75.2 | 1.4  | 22.5 | Peas .....      | 14.0 | 23.4 | 60.0  |
| Veal .....          | 68.5 | 10.1 | 16.5 | Wheat .....     | 14.0 | 14.6 | 69.4  |
| Eggs, white of.53.0 | 17.0 | .0   |      | Oats .....      | 13.6 | 17.0 | 66.4  |
| Lamb .....          | 50.5 | 11.0 | 35.0 | Rice .....      | 13.5 | 6.5  | 79.5  |
| Beef .....          | 50.0 | 15.0 | 30.0 | Cheese .....    | 10.0 | 65.0 | 9.0   |
| Chicken .....       | 46.0 | 18.0 | 32.0 | Butter .....    |      |      | 100.0 |

**Percentage of Nutrition**

|                      |      |                       |    |
|----------------------|------|-----------------------|----|
| Raw Cucumbers.....   | 2    | Raw Beef.....         | 26 |
| Raw Melons.....      | 3    | Raw Grapes.....       | 27 |
| Boiled Turnips.....  | 4 ½  | Raw Plums.....        | 29 |
| Milk .....           | 7    | Broiled Mutton.....   | 30 |
| Cabbage .....        | 7 ½  | Oatmeal Porridge..... | 75 |
| Currants .....       | 10   | Rye Bread.....        | 79 |
| Whipped Eggs.....    | 13   | Boiled Beans.....     | 87 |
| Beets .....          | 14   | Boiled Rice.....      | 88 |
| Apples .....         | 16   | Barley Bread.....     | 88 |
| Peaches .....        | 20   | Wheat Bread.....      | 90 |
| Boiled Codfish.....  | 21   | Baked Corn Bread..... | 91 |
| Broiled Venison..... | 22   | Boiled Barley.....    | 92 |
| Potatoes .....       | 22 ½ | Butter .....          | 92 |
| Fried Veal.....      | 24   | Boiled Peas.....      | 93 |
| Roast Pork.....      | 24   | Raw Oils.....         | 95 |
| Roast Poultry.....   | 26   |                       |    |





## CONTAGIOUS AND ERUPTIVE DISEASES

It will often relieve a mother's anxiety to know how long after a child has been exposed to a contagious disease there is danger the disease has been contracted. The following table gives the *period of incubation*—or anxious period—and other information concerning the more important diseases:

| Disease                  | Symptoms usually appear | Anxious period ranges from | Patient is infectious                   |
|--------------------------|-------------------------|----------------------------|-----------------------------------------|
| Chicken-Pox . . . . .    | On 14th day             | 10-18 days                 | Until all scabs have fallen off         |
| Diphtheria . . . . .     | " 2d day                | 2-5 days                   | 14 days after disappearance of membrane |
| Measles . . . . .        | " 14th day              | 10-14 days                 | *Until scaling and cough have ceased    |
| Mumps . . . . .          | " 19th day              | 16-24 days                 | 14 days from commencement               |
| German Measles . . . . . | " 14th day              | 12-20 days                 | 10-14 days from commencement            |
| Scarlet Fever . . . . .  | " 4th day               | 1-7 days                   | Until all scaling has ceased            |
| Small-Pox . . . . .      | " 12th day              | 1-14 days                  | Until all scabs have fallen off         |
| Typhoid Fever . . . . .  | " 21st day              | 1-28 days                  | Until diarrhea ceases                   |
| Whooping-Cough . . . . . | " 14th day              | 7-14 days                  | †Six weeks from beginning to whoop      |

\*In measles the patient is infectious three days before the eruption appears.

†In whooping-cough the patient is infectious during the primary cough, which may be three weeks before the whooping begins.

The following points may help to determine the nature of a suspicious illness:

| Rash or Eruption                                          | Appearance                                     | Disease        | Duration<br>in days | Remarks                                                |
|-----------------------------------------------------------|------------------------------------------------|----------------|---------------------|--------------------------------------------------------|
| Small rose pimples<br>changing to vesicles                | 2d day of fever or<br>after 24 hours' illness  | CHICKEN-POX .. | 6-7                 | Scabs form about<br>4th day of fever.                  |
| Diffuse redness and<br>swelling                           | 2d or 3d day of illness                        | ERYSIPELAS ... |                     |                                                        |
| Small red dots like<br>flea-bites                         | 4th day of fever or<br>after 72 hours' illness | MEASLES .....  | 6-10                | Rash fades on 7th<br>day.                              |
| Bright scarlet, dif-<br>fused                             | 2d day of fever or<br>after 24 hours' illness  | SCARLET FEVER. | 8-19                | Rash fades on 5th<br>day.                              |
| Small red pimples<br>changing to vesicles, then pustules. | 3d day of fever or<br>after 48 hours' illness  | SMALL-POX .... | 14-21               | Scabs form 9th or<br>10th day, fall off<br>about 14th. |
| Rose colored spots,<br>scattered                          | 7th to 14th day.....                           | TYPHOID FEVER. | 22-30               | Accompanied by di-<br>arrhea.                          |

**DISCOVERIES AND SETTLING OF COUNTRIES**

Andreanoffsy Isles, between Asia and America, discovered 1760.

Angola settled by Portugal, 1482.

Anguilla, in the Caribbees, first planted by England, 1650.

Antigua settled by the English, 1632.

Archangel, passage to, discovered, 1553.

Aruba Isle, planted by Holland, 1634.

Azores Isles discovered by Portugal, 1419.

Baffin's Bay discovered 1622.

Bahama Isles discovered, 1629; taken possession of by the English, December, 1718.

Barbadoes discovered and planted, 1614.

Barbuda Isle first planted by England, 1628.

Barrington Isle, one of the Gallapagos, explored, June, 1793.

Batavia, in the Island of Java, first fortified by Holland, 1618.

Bermuda Isles discovered, 1527; settled, 1612.

Boston, Mass., built, 1630.

Botany Bay settlement first sailed from England, March 21, 1787.

Bourbon (formerly Mascareen) Isle planted by France, 1672.

Brazil discovered, 1486; settled by the Spaniards, 1515; settled by Holland, 1624; taken from Holland by Portugal, 1654.

Britain discovered to be an island about 90.

Caledonia, in America, settled, 1699.

California discovered by Cortez, 1543.

Canada discovered by Cabot, 1499; explored by the French, 1508, 1524, and 1534; settled, 1540; Quebec built, 1603; taken first by England, 1628.

Canary Isles discovered 1344, and granted Spain; explored, 1393.

Cape Blanco, on the coast of Africa, discovered, 1441.

Cape Breton discovered by the English, 1584; yielded to France, 1632; taken by England, 1745; restored, 1748; again taken and kept, 1758.

Cape de Verd Islands discovered, 1447.

Cape of Good Hope discovered, 1487; planted by Holland, 1651.

Cape Horn first sailed round, 1616.

Carolina discovered, 1497; planted, 1629.

Caribbee Isles discovered, 1595.

Cat Isle, one of the Bahamas, the first discovery in America by Columbus, 1492.

Cayenne Isle first planted by France, 1635.

Ceylon, the Isle of, discovered, 1506.

Chatham Isle, one of the Gallapagos, explored, June, 1793.

Chile discovered by Spain, 1518.

China first visited by the Portuguese, 1517; conquered by the Eastern Tartars, 1635.

St. Christopher's, Isle of, discovered, 1595; settled by the English, 1626.

Congou Kingdom discovered, 1482; settled by Portugal, 1486.

Crimea settled by Russia, 1784.

Cuba discovered, 1492; settled in 1511.

Curacoa settled by the Dutch, 1634.

Darien settled, 1700.

Davis' Straits discovered, 1586.

De la Plate, river, discovered, 1512.

Deseada Isle was discovered by Columbus, 1494.

San Domingo, Isle of, discovered, 1492; city founded, 1494.

Dominica discovered by Columbus, November 3, 1493.

Easter Isle discovered, 1722.

East Indies discovered by the Portuguese, 1497; visited overland by some English, 1591; first Dutch voyage, 1595; first voyage of the English company, 1601; first from France, 1601; first voyage of the Danes, 1612.

Faulkland, Isles of, discovered, 1592.

Florida discovered by Cabot, 1500; settled in 1565.

Frobisher's Straits discovered, 1578.

Fox Island, in North Pacific Ocean, discovered, 1760.

Galapagos Isles discovered, 1700; explored by Captain James Colnett, 1793.



Georgia colony erected by General Oglethorpe, 1739.

Goree Isle, on the Guinea Coast, first planted by the Dutch, 1617.

Granada Isle settled by France, 1652.

Greenland was discovered in 1585; settled, 1721, 1731.

Guadaloupe Isle discovered by Columbus, 1493; planted by France, 1635.

Guinea Coast discovered by the Portuguese, 1482; slave trade commenced here by Captain Hawkins, an Englishman, 1563.

Helena, St., discovered, 1502; first possessed by England, 1600; settled by the English, 1651.

Hood's Isle, one of the Galapagos, in the Pacific Ocean, explored, June, 1793.

Hudson Bay discovered by Captain Hudson, 1607.

Iceland discovered by a Danish pirate in 860.

Jamaica discovered by Columbus, 1494; settled by the Spaniards, 1509.

Japan discovered, 1542; visited by the English, 1612.

Kamtschatka discovered by the Russians, 1739.

Ladrone Isles discovered, 1521.

Le Roach Island, near Faulkland's Island, discovered, 1657.

Louisiana, west of the Mississippi, discovered by the French, 1633; settled by them, 1718; ceded to the United States, 1801.

Madagascar discovered by the Portuguese, 1506.

Madeira, Island of, discovered, 1344 and 1418.

Magellan, Straits of, discovered, 1520.

Marigalante Isle discovered, 1493.

Maryland planted by Lord Baltimore at the expense of £40,000, 1633.

Mauritius Isle discovered, 1598; settled in 1721.

Mexico conquered by the Spaniards under Cortez, 1519-21.

Montreal discovered, 1534; settled, 1629.

Montserrat, in the West Indies, discovered by Columbus, 1493; planted by England, 1632.

Nevis planted by England, 1628.

New Caledonia discovered, 1774.

New England planted by the Puritans, 1620.

- Newfoundland discovered by Cabot, 1497; settled, 1614.
- New Guinea discovered, 1699.
- New Holland discovered by the Dutch, 1627; settled by the English, 1787.
- New Jersey planted by the Swedes, 1637.
- New Spain, or Mexico, discovered, 1518.
- New Zealand discovered, 1660; explored in 1769.
- New Plymouth built and settled, 1620.
- New York settled, 1664.
- Northeast passage to Russia discovered, 1553.
- Nova Scotia settled, 1622.
- Nova Zembla discovered, 1553.
- Otahelte, or George III.'s Island, discovered, June 18, 1765.
- Owhy-he Island discovered, 1778, where Captain Cook was killed.
- Palmyra, ruins of, in the Deserts of Syria, discovered, 1678.
- Panama settled, 1516.
- Paraguay discovered, 1525.
- Pennsylvania, Penn's charter for planting, 1680.
- Peru discovered, 1518.
- Philippine Isles discovered by the Spaniards, 1521.
- Pitt's Straits, in the East Indies, discovered, April 30, 1760.
- Porto Rico discovered, 1497.
- Saba planted by the Dutch, 1640.
- Salem, Mass., settled, 1628.
- Sandwich Islands, in the Pacific Ocean, discovered, 1778.
- Savannah settled, 1732.
- Sierra Leone Coast discovered, 1460.
- Society Isles, in the Pacific Ocean, discovered, 1765.
- Solomon's Isles, in America, discovered, 1527.
- Somer's Isles discovered, 1527.
- St. Eustatia Isle settled by Holland, 1632.
- St. Lawrence River discovered and explored by the French, 1508.
- San Salvador, Guanihani, or Cat Island, was the first land discovered in the West Indies, or America, by Columbus, October 12, 1492.
- Suffolk Isles discovered, 1764.

Surinam planted by England, 1640.

Surat settled, 1603.

Tate Island, East Indies, discovered, June 29, 1795.

Tobago planted by the Dutch, 1642.

Terceras Isles discovered by the Spaniards, 1583.

Terra Firma settled by the Spaniards, 1524.

Trinidad, the Isle of, discovered, 1498.

Ukraine settled by Russia, 1752.

Virginia discovered by Sir Walter Raleigh, 1584;  
the settlement of the first permanent colony  
there, 1607; first marriage, 1608.

West Indies discovered by Columbus, 1492.

### **A Rule for Determining the Weight of Live Cattle by Measurement**

There are many rules for estimating the weight of cattle by measurement, but one of the authorities on the subject says that "There is no rule that comes nearer than good guessing," and that "no two animals will weigh alike according to measurement." The same authority further remarks that a rule, as good as any, is to find the superficial feet by multiplying the girth just behind the shoulderblade by the length from the fore part of the shoulderblade to the root of the tail. Thus an ox girthing seven feet nine inches and measuring six feet in length would contain seven and three-fourths times six or  $46\frac{1}{2}$  superficial feet. For cattle, grassfed, the following is given as the weight per superficial foot:

Girth less than 3 feet.....11 pounds

Girth 3 to 5 feet.....16 pounds

Girth 5 to 7 feet.....23 pounds

Girth 7 to 9 feet.....31 pounds

Thus the steer, as per above measurements, should weigh 46.50 by 31, or 1,441 pounds gross. Under this rule it is usual to deduct one pound in twenty on half-fatted cattle, from fifteen to twenty pounds on a cow having had calves, and if not fat an equal amount. The author of this rule suggests its use only when the scale is wanting, as the scale is the only true standard.

### **U. S. Military Academy at West Point**

The United States military academy at West Point, N. Y., is a school for the practical and theoretical training of cadets for the military service of the United States. The maximum number of cadets at present permitted by law is 742. The corps of cadets consists of two for each Senator, Congressional District and Territory (including Porto Rico, Alaska, Hawaii), four from the District of Columbia, and eighty from the United States at large, all appointed by the President.

Appointments are usually made one year in advance of date of admission, by the Secretary of War, upon the nomination of the Senator or Representative. These nominations may either be made after competitive examination or given direct, at the option of the Representative. The Representative may nominate a legally qualified second candidate, to be designated the alternative. The alternative will receive from the War Department a letter of appointment, and will be examined with the regular appointee, and if duly qualified will be admitted to the Academy in the event of the failure of the principal to pass the prescribed preliminary examinations. Appointees to the Military Academy must be between seventeen and twenty-two years of age, free from any infirmity which may render them unfit for military service, and able to pass a careful examination in reading, writing, orthography, arithmetic, grammar, geography and history of the United States.

The course of instruction, which is quite thorough, requires four years, and is largely mathematical and professional. The principal subjects taught are mathematics, French, drawing, drill regulations of all arms of the service, natural and experimental philosophy, chemistry, chemical physics, mineralogy, geology, electricity, history, international, constitutional and military law, Spanish, civil and military engineering, art and science of war, and ordnance and gunnery. About one-fourth of those appointed usually fail to pass



the preliminary examinations, and but little over one-half the remainder are finally graduated. The discipline is very strict—even more so than in the army—and the enforcement of penalties for offences is inflexible rather than severe. Academic duties begin Sept. 1 and continue until June 1. Examinations are held in each January and June, and cadets found proficient in studies and correct in conduct are given the particular standing in their class to which their merits entitle them, while those cadets deficient in either conduct or studies are discharged.

From about the middle of June to the end of August cadets live in camp, engaged only in military duties and receiving practical military instruction. Cadets are allowed but one leave of absence during the four years' course, and this is granted at the expiration of the first two years. The pay of a cadet is \$709.50 per year, and, with proper economy, sufficient for support. The number of students at the Academy is usually about 425.

Upon graduating, cadets are commissioned as second lieutenants in the United States Army. The whole number of graduates from 1802 to 1916, inclusive, has been five thousand six hundred and one (5,601). It is virtually absolutely necessary for a person seeking an appointment to apply to his Senator or Member of Congress. The appointments by the President are usually restricted to sons of officers of the army and navy, who, by reason of their shifting residence, due to the necessities of the service, find it next to impossible to obtain an appointment otherwise.

The Academy was established by act of Congress in 1802. An annual Board of Visitors is appointed, seven being appointed by the President of the United States, two by the President of the Senate, and three by the Speaker of the House of Representatives. They visit the Academy in June, and are present at the concluding exercises of the graduating class of that year.

The Academy is on a plain 160 feet above the

river Hudson, surrounded by the bold scenery of one of the finest river passes in the world.

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### **U. S. Naval Academy at Annapolis**

There are allowed at the Academy three midshipmen for each Senator, Representative or Delegate in the House of Representatives, two for the District of Columbia, and fifteen at large. The appointment of cadets at large and for the District of Columbia is made by the President. The Secretary of the Navy, as soon after March 5 in each year as possible, must notify, in writing, each member and Delegate of the House of Representatives of any vacancy that may exist in his district. The nomination of a candidate to fill the vacancy is made, on the recommendation of the Member or Delegate, by the Secretary. Candidates must be actual residents of the districts from which they are nominated.

The course for midshipmen is four years, nine months of which are spent at sea. Candidates at the time of their examination for admission must not be under sixteen nor over twenty years of age and physically sound, well formed and of robust constitution. They are examined mentally by the academic board in reading, writing, spelling, arithmetic, geography, English grammar, United States history, algebra through quadratic equations, and plane geometry (five books of Chauvenet's Geometry, or an equivalent). Deficiency in any one of these subjects may be sufficient to insure the rejection of the candidate. They enter the Academy immediately after passing the prescribed examinations, and are required to sign articles binding themselves to serve in the United States Navy during the pleasure of the President of the United States (including the time of probation at the Naval Academy), unless sooner discharged. The pay of a midshipman is \$600 a year, beginning at the date of admission.

Appointments to fill all vacancies that may occur during a year in the lower grades of the Line of the Navy and of the Marine Corps will be made from the midshipmen, graduates of the

year, at the conclusion of their four years' course, in the order of merit as determined by the Academic Board of the Naval Academy.

The Academy was founded in 1845 by Hon. George Bancroft, Secretary of the Navy in the administration of President Polk. It was formally opened October 10 of that year, with Commander Franklin Buchanan as Superintendent. During the Civil War it was removed from Annapolis, Md., to Newport, R. I., but was returned to the former place in 1865. It is under the direct supervision of the Bureau of Navigation.

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### Origin of "The Old Oaken Bucket"

Samuel Woodworth, the author of "The Old Oaken Bucket," was a printer by trade, who served his apprenticeship at Boston in the office of Major Russell, the publisher of the *Sentinel*. The beautiful and popular ballad had its origin under the following circumstances: He was employed in an office on the corner of Chestnut and Chambers street, New York. One day, with a group of typos, he dropped into Mallory's on Franklin street for the purpose of taking "some brandy and water," for which the place was noted. The liquor was excellent and Woodworth seemed inspired by it, for after taking a draught he set his glass upon the table and, smacking his lips, declared that Mallory's *eau de vie* was superior to anything he had ever tasted. "No," said a comrade, "you quite mistake; there is one thing which in both our estimations far surpassed this in the way of drink." "What was that?" asked Woodworth, dubiously. "The draught of pure, cold water that we used to drink from the old oaken bucket which hung in the well, after our return from the labors of the field on a sultry day in summer." The teardrop glistened for a moment in Woodworth's eye. "True, true," he replied, and soon after quitted the place. He returned to the office, grasped his pen, and in half an hour "The Old Oaken Bucket" was ready in manuscript.

# ARCHITECTS' AND BUILDERS' TABLES AND ESTIMATES

## *Roof Elevations.*

By the "pitch" of a roof is meant the relation which the height of the ridge above the level of the roof-plates bears to the span, or the distance between the studs on which the roof rests. The length of rafters for the most common pitches can be found as follows, from any given span:

If  $\frac{1}{4}$  pitch, multiply span by .559, or 7-12 nearly.

If  $\frac{1}{3}$  pitch, multiply span by .6, or 3-5 nearly.

If  $\frac{3}{8}$  pitch, multiply span by .625, or  $\frac{5}{8}$  nearly.

If  $\frac{1}{2}$  pitch, multiply span by .71, or 7-10 nearly.

If  $\frac{5}{8}$  pitch, multiply span by .8, or 4-5 nearly.

If full pitch, multiply by 1.12, or  $1\frac{1}{8}$  nearly.

To lengths thus obtained must be added amount of projection of rafters at the eaves.

As the rafters must be purchased of even lengths, a few inches more or less on their lengths will make a difference to the pitch so slight that it cannot be detected by the eye.

Ex.—To determine the length of rafters for a roof constructed one-half pitch, with a span of 24 feet— $24 \times .71 = 17.04$ ; or, practically, just 17 feet. A projection of one foot for eaves makes the length to be purchased 18 feet.

## *Shingles Required in a Roof.*

To the square foot it takes 9 if exposed four inches; 8 if exposed  $4\frac{1}{2}$  inches, and 7 1-5 if exposed 5 inches to the weather.

Find the number of shingles required to cover a roof 38 feet long, and the rafters on each side 14 feet. Shingles exposed  $4\frac{1}{2}$  inches.

$28 \times 38 = 1064$  (square feet)  $\times 8 = 8512$  shingles.

Ans.

To find the length of rafters, giving the roof one-third pitch; take three-fifths of the width of the building. If the building is 30 feet wide, they must be 18 feet long, exclusive of projection.



## ASTRONOMICAL FACTS

### How to Find the Constellations

The Great Bear, whose seven brightest stars are visible every clear night in our hemisphere, is called *Ursa Major*, and the Little Bear *Ursa Minor*. The star at the tip of the Little Bear's tail is our Pole Star; it is named Polaris. It is almost immediately overhead at the North Pole of the earth. Its appearance is very useful to seamen and landsmen alike, because from it they can determine their position on sea or land. When they observe any known star to be overhead, and calculate that star's angular distance from the Pole Star, they ascertain their terrestrial distance south of the earth's pole.

The following easy method will enable any one to find the Pole Star: Observe how a straight line from the two outer stars in the Great Bear, if extended, leads directly to the end star in the Little Bear. Trace this line on the sky, and the Pole Star can never afterwards be forgotten.

Cassiopeia can easily be found; the constellation is near the Bear, and has five bright stars assuming the form of an irregular "W." "Cygnus" (The Swan), has five bright stars in the form of a cross, just to the right of Vega, the principal star in the *Lyre*.

### Equator

The Terrestrial Equator is an imaginary great circle, equally distant from the poles of the earth, and dividing it into two equal hemispheres. The Celestial Equator is simply the Terrestrial Equator extended outward to the heavens.

### Equinoxes

The two points where the equator and ecliptic intersect each other. At these times day and night are equal over the world. Spring equinox occurs on March 21, and autumnal equinox, September 22.

### Halo

A colored circle of light, about 45 deg. diameter, round the sun or moon, and formed by the refraction of the rays from the luminaries named.

### Harvest and Hunter's Moon

The former term is applied to the full moon which happens on or nearest to the 21st September, because it rises on several consecutive nights more nearly after sunset than any other full moon of the year, and is specially favorable for harvesting work in the evening. The "hunter's" moon is the first full moon following the harvest moon.

### Gravity

is the force or tendency in material bodies to fall toward each other. This force varies inversely as the squares of the distances separating them, and is directly proportional to the mass.

### Planet

A wandering or moving body. Planets are distinguished from fixed stars by their variations of position, and by the comparative steadiness of their luster. Inferior planets are those planets situated within the Earth's orbit—viz., Mercury and Venus. Superior planets are those revolving outside the Earth's orbit—viz., Mars, Jupiter, Saturn, Uranus, and Neptune. There are 8 major planets, 20 satellites, and 278 planetoids known at the present time. The Earth has 1 satellite, Mars 2, Jupiter 4, Saturn 8, Uranus 4, Neptune 1. The planetoids are small bodies often termed minor planets, revolving between the orbits of Mars and Jupiter.

### Neptune

The farthest known planet from the sun. Discovered by Leverrier and Adams, 1846.

Mean distance from the Sun..2,772,000,000 miles.

Period of revolution.....164 $\frac{3}{4}$  years.

Real diameter.....35,000 miles.

### Mars

A major planet, and the fourth in the order of distance from the Sun:

Mean distance from the Sun..140,000,000 miles.

Period of revolution.....687 days.

Period of rotation.....24h. 37m. 22 $\frac{1}{2}$ s.

Real diameter.....5,000 miles.

**Mercury**

The nearest planet to the Sun :

Mean distance from the Sun..36,000,000 miles.

Period of revolution.....88 days.

Real diameter.....3,000 miles.

**Jupiter**

The largest planet of the solar system :

Mean distance from the Sun..484,000,000 miles.

Period of revolution.....nearly 12 years.

Period of rotation.....9h. 55m. 37s.

Real diameter.....88,000 miles.

**Saturn**

was regarded as the outermost orb of the solar system before the discovery of Uranus in March, 1781.

Mean distance from the Sun..878,000,000 miles.

Period of revolution.....29½ years.

Period of rotation.....10h. 14m. 23.8s.

Real diameter.....74,600 miles.

Real diameter of luminous ring.166,000 miles.

**Rings of Saturn**

A unique luminous appendage to the planet Saturn. Galileo first saw it, but Haghens, in 1654, was the first to discover its real aspect. It is a very thin structure, though extending a considerable distance in a direction away from the planet, and lies parallel with the equator. It is divided into several separate rings, and becomes practically invisible once in about 15 years, being then turned edgewise toward the earth.

**Uranus**

A major planet discovered by W. Herschel in 1781.

Mean distance from the Sun..1,774,000,000 miles.

Period of revolution.....84 years.

Real diameter.....31,000 miles.

**Venus**

The morning and evening star, and the most lustrous object in the sky, the Sun and Moon excepted.

Mean distance from the Sun..67,000,000 miles.

Period of revolution.....224 7/10 days.

Period of rotation.....23h. 21m.

Real diameter.....7,400 miles.

### The Sun

The great central luminary of our system, and the source of light and heat.

Mean distance from the Earth. 92,393,000 miles.

Real diameter.....861,600 miles.

Apparent diameter.....32 min. of arc.

Rotation .....25¼ days.

### Sun Spots

Dark and bright spots are visible on the Sun, and are rapidly variable. They attain a maximum about every 11 years. The dark spots consist of a penumbra with an interior umbra, and sometimes a black nucleus. They are most abundant in zones N. and S. of the equator. Red hydrogen flames are constantly evolved from the solar surface.

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### Meteors

The records of meteors are certainly wonderful. It is related that at Crema, Italy, one day in the 15th century, the sky at noonday became dark—a cloud of appalling blackness overspreading the heavens. Upon this cloud appeared the semblance of a great peacock of fire flying over the town. This suddenly changed to a huge pyramid, that rapidly traversed the sky. Thence arose awful lightnings and thunderings, amid which there fell upon the plain great rocks, some of which weighed 100 pounds. In 1803 a brilliant fire-ball (meteor) was seen traversing Normandy with great velocity, and some moments after, frightful explosions, like the noise of cannon or roll of musketry, were heard coming from a single black cloud hanging in a clear sky; they were prolonged for five or six minutes. These discharges were followed by a great shower of stones, some weighing over twenty-four pounds. In 1814 a meteor was witnessed in Massachusetts and Maryland, the diameter of which was estimated at half a mile. Its height was thought to be about twenty-five miles. In July, 1860, a brilliant fireball passed over the State of New



York from west to east, and finally was seen to fall into the sea off Sandy Hook.

One of the earliest accounts of star-showers is that which relates how in 472 the sky at Constantinople appeared to be alive with flying stars and meteors. In some Eastern annals we are told that in October, 1202, "the stars appeared like waves upon the sky. They flew about like grasshoppers, and were dispersed from left to right." It is recorded that in the time of King William II. there occurred in England a wonderful shower of stars, which "seemed to fall like rain from heaven. An eye-witness seeing where an aerolite fell, cast water upon it, which was raised in steam with a great noise of boiling."

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### Aerolites

The fall of aerolites is frequently mentioned and well authenticated. Chinese records tell of one as long ago as in 616 B. C., which in its fall, broke several chariots and killed ten men. A block of stone, equal to a full wagon-load, fell in the Hellespont, B. C. 465. By the ancients, these stones were held in great repute. The Emperor Jehangire, it is related, had a sword forged from a mass of meteoric iron which fell in the Punjab in 1620. In 1795, a mass was seen by a plowman, to descend toward the earth at a spot not far from where he was standing. It threw up the soil on every side, and penetrated some distance into the solid rock beneath. In 1807, a shower of stones, one weighing 200 pounds, fell at Weston, Conn. These aerolites are sometimes seen to plunge downward into the earth, and are found while yet glowing. A mass thus fell in South America, which was estimated to weigh 15 tons. When first discovered, it was so hot as to prevent all approach. Upon its cooling, many efforts were made, by some travelers who were present, to detach specimens, but its hardness was too great for any tools which they possessed. There is a mass of meteoric iron in the university collection at Yale, weighing 1,635 pounds.

### Yellowstone Park

The Yellowstone National Park extends sixty-five miles north and south and fifty-five miles east and west, comprising 3,575 square miles, and is 6,000 feet or more above sea level. Yellowstone lake, twenty miles by fifteen, has an altitude of 7,788 feet. The mountain ranges which hem in the valleys on every side rise to the height of 10,000 to 12,000 feet, and are always covered with snow. This great park contains the most striking of all the mountains, gorges, falls, rivers, and lakes in the whole Yellowstone region. The springs on Gardiner's River cover an area of about one square mile, and three or four square miles thereabout are occupied by the remains of springs which have ceased to flow. The natural basins into which these springs flow are from 4 to 6 feet in diameter and from 1 to 4 feet in depth. The principal ones are located upon terraces midway up the sides of the mountain. The banks of the Yellowstone River abound with ravines and canons, which are carved out of the heart of the mountains through the hardest rocks. The most remarkable of these is the canon of Tower Creek and Column Mountain. The latter, which extends along the eastern bank of the river for upward of two miles, is said to resemble the Giant's Causeway. The canon of Tower Creek is about ten miles in length and is so deep and gloomy that it is called "The Devil's Den." Where Tower Creek ends the Grand Canon begins. It is twenty miles in length, impassable throughout, and inaccessible at the water's edge except at a few points. Its rugged edges are from 200 to 500 yards apart, and its depth is so profound that no sound ever reaches the ear from the bottom. The Grand Canon contains a great multitude of hot springs of sulphur, sulphate of copper, alum, etc. In the number and magnitude of its hot springs and geysers, the Yellowstone Park surpasses all the rest of the world. There are probably fifty geysers that throw a column of water to the height of from 50 to 200 feet,

and it is stated that there are not fewer than 5,000 springs; there are two kinds, those depositing lime and those depositing silica. The temperature of the calcareous springs is from 160 to 170 degrees, while that of the others rises to 200 or more. The principal collections are the upper and lower geyser basins of the Madison River and the calcareous springs on Gardiner's River. The great falls are marvels.

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### **Famous American Caves**

The Mammoth Cave is in Edmonson County, near Green River, about seventy-five miles from Louisville. It was discovered in 1809 by a hunter named Hutchins, while in pursuit of a wounded bear. Its entrance is reached by passing down a wild, rock ravine through a dense forest. The cave extends some nine miles. To visit the portions already traversed, it is said, requires 150 to 200 miles of travel. The cave contains a succession of wonderful avenues, chambers, domes, abyssees, grottoes, lakes, rivers, cataracts, and other marvels, which are too well known to need more than a reference. One chamber—the Star—is about 500 feet long, 70 feet wide, 70 feet high, the ceiling of which is composed of black' gypsum, and is studded with innumerable white points that by a dim light resemble stars, hence the name of the chamber. There are avenues one and a half and even two miles in length, some of which are incrustated with beautiful formations, and present the appearance of enchanted palace halls. There is a natural tunnel about three-quarters of a mile long, 100 feet wide, covered with a ceiling of smooth rock 45 feet high. There is a chamber having an area of from four to five acres, and there are domes 200 and 300 feet high. Echo River is some three-fourths of a mile in length, 200 feet in width at some points, and from 10 to 30 feet in depth, and runs beneath an arched ceiling of smooth rock about 15 feet high; while the Styx, another river, is 450 feet long, from 15 to 40 feet wide, and from 30 to 40 feet

deep, and is spanned by a natural bridge. Lake Lethe has about the same length and width as the river Styx, varies in depth from 3 to 40 feet, lies beneath a ceiling some 90 feet above its surface, and sometimes rises to a height of 60 feet. There is also a Dead Sea, quite a somber body of water. There are several interesting caves in the neighborhood, one three miles long.

Wyandotte Cave is in Jennings Township, Crawford County, Ind., near the Ohio River. It is a rival of the great Mammoth Cave in grandeur and extent. Explorations have been made for many miles. It excels the Mammoth Cave in the number and variety of its stalagmites and stalactites, and in the size of several of its chambers. One of these chambers is 350 feet in length, 245 feet in height, and contains a hill 175 feet high on which are three fine stalagmites. Epsom salts, niter and alum have been obtained from the earth of the cave.

Howe's Cave is situated thirty-nine miles from Albany, N. Y., and, after the Luray Cave, Virginia, and the Mammoth Cave, Kentucky, is probably the most remarkable cavern known. Lester Howe, for whom it was named, discovered it in the year 1842. It is also called the Otsgaragee Cave. Howe, it is related, penetrated to a distance of eleven or twelve miles, but visitors do not generally go farther than about four miles. The cave is lighted by gas as far as a body of water called the Stygian Lake. The entrance is about fifty feet above the valley, and the rock chambers known as the Reception Room, Washington Hall, the Bridal Chamber, and the Chapel, are successively reached. Then the Harlequin Tunnel is traversed and the visitor passes through Cataract Hall, Ghost Room, and Music Hall. The Stygian Lake is 10 feet deep, and is 30 by 20 feet in extent. Fine stalagmites appear both above and below the lake. The visitor crosses the lake in a small boat, landing on Plymouth Rock, whence the path follows a small brook, and traverses the chambers and passages known



as Devil's Gateway, Museum, Geological Room, Uncle Tom's Cabin, Giants' Study, Pirates' Cave, Rock Mountains and Valley of Jehoshaphat. Then the Winding Way is succeeded by the Rotunda. The stalactites and stalagmites are abundant and beautiful.

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### **In What Way and by Whom Coal Oil Was Discovered**

Like many other similar discoveries, that of coal oil has been traced simultaneously to several localities and persons. It is certain, however, that for many years oil had been observed floating on the surface of the water in a well not far from Titusville, Pa., and while it was used it was merely in a small way, and for medicinal purposes. In the year 1853 Dr. Brewer suggested its use for lighting and lubricating, and in 1854 the first of the oil companies was formed, but the dull times came and the operations of the concern were in a rather indifferent condition. However, Messrs. Drake and Bowditch, of the company referred to, concluded that they would sink a well, and they were at once satisfied by seeing from 400 to 1,000 gallons of oil a day being the product. The "boom" thus given caused thousands to flock to the oil regions, and in two or three years experiment had shown pretty nearly the boundaries and capacity of the oil-producing region. Up to 1861 the wells found were those where the oil had to be pumped out by various methods, all the way from the common pump up to the most improved machinery, and in quantities varying with the apparatus employed. But in the year just indicated the first large flowing well was struck, and the oil rose so plenteously as to flow over the surface, yielding from 800 to 1,000 barrels daily. The oil region of the Keystone State is but one of several extensive districts on this continent which are very productive, and the assertion may be ventured that we know very little of the boundless supplies which a Great First Cause has hidden away in the earth until we need them.

### Age and Growth of Trees

An oak tree in three years grows 2 feet 10½ inches. A larch 3 feet 7½ inches; at seventy years it is full grown, and a tree of seventy-nine years was 102 feet high and 12 feet girth, containing 253 cubic feet. Another of eighty years was 90 feet and 17 feet, and 300 cubic feet. An elm tree in three years grows 8 feet 3 inches. A beech, 1 foot 8 inches. A poplar, 6 feet. A willow, 9 feet 3 inches. An elm is full grown in 150 years and it lives 500 or 600. Ash is full grown in 100 and oak in 200. The mahogany is full grown in 200 years to a vast size. A Polish oak 40 feet round had 600 circles. An oak in Dorsetshire in 1755 was 68 feet round; two near Cranborne Lodge are 38 feet and 36 feet. There are yews from 10 to 20 feet in diameter, whose age is from 1,000 to 2,000 years. A lime in the Crisons is 51 feet round and about 600 years old. An elm in the Pays de Vaud is 18 feet in diameter and 360 years old. The African baobab is the patriarch of living organizations; one specimen by its circles is estimated at 5,700 years old by Adamson and Humboldt. The trunk is but 12 or 15 feet to the branches, and often 75 feet round. A cypress in Mexico is 120 feet round, and is estimated by De Candolle to be older than Adamson's baobab. The cypress of Montezuma is 41 feet round. Strabo wrote of a cypress in Persia as being 2,500 years old. The largest tree in Mexico is 127 feet round and 120 high, with branches of 30 feet. A chestnut tree on Mount Etna is 106 feet round close to the ground, and five of its branches resemble great trees. De Candolle says there are oaks in France 1,500 years old. The Wallace oak near Paisley is nearly 800 years old. The yew trees at Fountain's Abbey are about 1,200 years old. That at Crowhurst, 1,500. That at Fortingal, above 2,000. That at Braburn, 2,500 to 3,000. Ivies reach 500 or 600 years. The larch the same. The lime 600 or 700 years. The trunk of a walnut tree 12 feet in diameter, hollowed out, and furnished as a sitting-room, was imported from America and exhibited in

London. The trunk was 80 feet high without a branch, and the entire height 150 feet, the bark twelve inches thick, and the branches from three to four feet in diameter. The California pine is from 150 to 200 feet high and from twenty to sixty feet in circumference. The forests in watered, tropical countries are formed of trees from 100 to 200 feet high, which grow to the water's edge of rivers, presenting a solid and impenetrable barrier of trunks ten or twelve feet in diameter. The dragon tree is in girth from 40 to 100 feet, and 50 or 60 feet high.

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### **The Search for the North Pole**

Captain Roald Amundsen sailed on June 17, 1903, from Christiania, Norway, in the sloop *Gjoa*, entered the ice pack in the North Atlantic, and three years later emerged into the North Pacific—the first man that ever accomplished the North-western Passage from ocean to ocean. During his trip he also discovered the magnetic pole.

The centuries' record of the quest of the north pole is a history of romance, hardship and death. More than 750 men have offered up their lives in various expeditions. Hardly an expedition has sailed into the unending night of the arctic autumn that did not leave some one buried under the snow and ice before it returned. Many entire expeditions were lost and the clustered skeletons found in after years by other explorers were the only records of their miserable end.

The search for the pole started in the ninth century. Before that the ancients knew vaguely of the frozen regions of the north, and their mythologies refer to it. Runic stones that are found as far north as the seventy-third degree show that it was inhabited in 1235. The Norsemen had colonized Iceland at that time, and one of the expeditions from that country has left a record of reaching 75 degrees 36 seconds in 1246.

After the discovery of America the voyages

northward started in earnest. Belief that a northern route to India might be found was the lure that attracted the early explorers. In 1553 Sir Hugh Willoughby led an expedition that Sebastian Cabot promoted. The knight and his sixty-two men perished to a man from exposure. Richard Chancellor, who commanded the other of the two ships in the expedition, reached Russia, and polar discovery did not lag.

#### GO IN SEARCH OF GOLD.

Three years later Sir Martin Frobisher discovered what he believed to be gold and a score of expeditions were fitted out in England. Frobisher perished with forty men. In 1845 Sir John Franklin with an elaborate expedition sailed to his death with 145 men.

American expeditions have been less tragic. Lieutenant De Long, in 1879, lost twenty-three men, and A. W. Greeley managed to return after frightful hardships with a loss of twenty men. The Duke de Abruzzi, a nephew of the king of Italy, had only a small loss in his successful expedition. Andre, who sailed in a balloon, 1897, never has been heard from.

Walter Wellman attempted a flight to the pole in a balloon from Spitzbergen, Aug. 15, 1909, but descended in the sea because of defective machinery. There were four passengers aboard and all were saved.

Robert E. Peary attained the North Pole April 6, 1909.

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#### Is the Moon Inhabited?

From what is now known of the moon it is certain that if that body is inhabited it must be by beings organized very differently from the human race or any animals on the earth. The moon is without water and without atmosphere; and, owing to the fact that it revolves on its axis but once a month, so that the lunar days and nights are each nearly thirty times as long as our days and nights, the extremes of heat and cold range every month from 400 degrees Fahrenheit above zero to 300 below.



### The Catacombs of Rome

Many of the catacombs are of great antiquity, probably having been hewn long before the Rome of Romulus and Remus was founded, and so extended, in course of time, that every one of the seven hills on which the city stood was perforated and honeycombed by passages, dark galleries, low corridors and vaulted halls. What generally facilitated the work was the light and soft nature of the material to be quarried, and the workmen were thus enabled to shape the shafts and galleries as they pleased. As the city grew in extent and wealth, these quarries were enlarged or new ones opened, until the decline of the empire began, and then old edifices were made to supply the materials to build new ones. But little is to be gleaned from the ancient writers as to the uses to which these subterranean recesses were put when they ceased to be quarried. Horace says of the caverns under the Esquiline Hill, that it "was the common sepulchre of the miserable plebeians." The catacombs were crowded with the Christians during the persecutions under Nero, Domitian, Trajan, Hadrian, Severus, Maximinus, and Diocletian, who found there retreats which saved them from the tyranny of the Roman royal pagans. It is held by some modern writers that though the quarries were used to some extent as sepulchres, it is evident that the greater part of the catacombs were originally constructed as places of interment for the dead. Each catacomb forms a network of passages, or galleries, intersecting each other at right angles, but sometimes diverging from a common center; these galleries, or passages, are usually about eight feet high, and from three to five feet wide. The graves are in tiers on the sides, and when undisturbed are found closed with marble slabs or tiles, on which are often inscriptions or Christian emblems. It has been estimated that the entire length of the catacombs is not less than 580 miles and that they contain about 6,000,000 bodies. From being the refuge of per-

secuted Christians, they became about the thirteenth century the hiding places of outlaws and assassins, who were, however, finally driven out or the entrances to their retreats closed. Many interesting and valuable works have been written on the subject, and fathers of the Christian church have spent their lives in investigating these wonderful caverns.

### Air-Line Distances from Washington to Various Parts of the World

|                        | Miles. |                        | Miles. |
|------------------------|--------|------------------------|--------|
| Alexandria, Egypt...   | 5,275  | Manila, Phil. Isl..... | 9,360  |
| Amsterdam, Holland...  | 3,555  | Mecca, Arabia.....     | 6,598  |
| Athens, Greece.....    | 5,005  | Muscat, Arabia.....    | 7,600  |
| Auckland, N. Zeal'd... | 8,290  | Morovia, Liberia.....  | 3,645  |
| Algiers, Algeria.....  | 3,425  | Morocco, Morocco.....  | 3,305  |
| Berlin, Prussia.....   | 3,847  | Mourzouk, Fezzan....   | 5,525  |
| Berne, Switzerland...  | 3,730  | Mozambique, Mozam...   | 7,348  |
| Brussels, Belgium....  | 3,515  | Ottawa, Canada.....    | 642    |
| Batavia, Java.....     | 11,118 | Panama .....           | 1,825  |
| Bombay, Hindostan...   | 8,548  | Parana, A. R.....      | 4,733  |
| Buenos Ayres, A. R...  | 5,013  | Petrograd, Russia...   | 4,296  |
| Bremen, Germany....    | 3,500  | Port au Prince, Hayti  | 1,429  |
| Constantinople, Trky.  | 4,880  | Paris, France.....     | 3 485  |
| Copenhagen, Denmark.   | 3,895  | Pekin, China.....      | 8,783  |
| Calcutta, Hindostan... | 9,348  | Quebec, Canada.....    | 601    |
| Canton, China.....     | 9,000  | Quito, Ecuador.....    | 2,531  |
| Cairo, Egypt.....      | 5,848  | Rio Janeiro, Brazil... | 4,280  |
| Cape Town, Cape Clny.  | 6,684  | Rome, Italy.....       | 4,365  |
| Cape of Good Hope...   | 6,734  | Stockholm, Sweden...   | 4,055  |
| Caracas, Venezuela...  | 1,058  | Shanghai, China.....   | 8,600  |
| Charlotte Town, P.E.I. | 820    | Singapore, Malay....   | 11,300 |
| Dublin, Ireland.....   | 3,076  | St. John's, Newfound.  | 1,340  |
| Delhi, Hindostan....   | 8,368  | San Domingo, San D.    | 1,300  |
| Edinburgh, Scotland..  | 3,275  | San Juan, Nicaragua.   | 1,740  |
| Frederickton, N. B...  | 670    | San Salvador, C. A...  | 1,650  |
| Gibraltar, Spain.....  | 3,150  | Santiago, Chile.....   | 4,970  |
| Glasgow, Scotland....  | 3,215  | Spanish Town, Jam'ca.  | 1,446  |
| Halifax, Nova Scotia.  | 780    | Sidney, C. B. I.....   | 975    |
| Hamburg, Germany...    | 3,570  | Sidney, Australia....  | 8,963  |
| Havana, Cuba.....      | 1,139  | St. Paul de Loanda...  | 5,578  |
| Honolulu, S. I.....    | 4,513  | Timbuctoo, Soudan...   | 3,395  |
| Jerusalem, Palestine.  | 5,495  | Tripoli, Tripoli.....  | 4,425  |
| Jamestown, St. Helena  | 6,150  | Tunis, Tunis.....      | 4,240  |
| Lima, Peru.....        | 3,515  | Toronto, Canada.....   | 343    |
| Lisbon, Portugal.....  | 3,190  | Venice, Italy.....     | 3,835  |
| Liverpool, England...  | 3,228  | Vienna, Austria.....   | 4,115  |
| London, England.....   | 3,315  | Valparaiso, Chile....  | 4,934  |
| City of Mexico, Mex... | 1,867  | Vera Cruz, Mexico...   | 1,680  |
| Montevideo, Uruguay.   | 5,003  | Warsaw, Poland.....    | 4,010  |
| Montreal, Canada....   | 471    | Yeddo, Japan.....      | 7,530  |
| Madrid, Spain.....     | 3,485  | Zanzibar, Zanzibar...  | 7,078  |

### **The Death of J. Wilkes Booth**

After the shot in the theater at Washington which resulted in the death of President Lincoln, Booth had scarcely escaped from the theater when special detectives and a squad of United States cavalry were upon his track, for he had been recognized by some as he appeared for a moment after the shot. After being deluded several times, his pursuers finally learned that, accompanied by Harold, who had held his horse at the door of the theater, Booth had gone thirty miles into Maryland, and there had his broken leg dressed by a Doctor Mudd, who had also given him a crutch. For ten days longer he escaped, hiding in swamps and thickets; but he was at length traced to Garrett's barn, on Bowling Green, about twenty miles from Fredericksburg. The pursuing party, twenty-eight in number, reached the barn at dusk, and ordered Booth and Harold to surrender. The latter, after a short parley, yielded, but Booth declared that he would never be taken alive. In hope of driving him out, fire was set to some straw about the barn, but unimpressed he stood his ground, and was in the act of firing at one of his besiegers, when Colonel Conger commanded Sergeant Boston Corbett to shoot. The ball entered Booth's head, and two hours and a half later he died in great agony. Booth's body was originally buried in the grounds of the arsenal at Washington, under some willow trees, and the grave was unmarked, even by a mound. Very few people knew where it lay, and various stories of its disposition were current. In 1866 Edwin Booth, the actor, applied to President Johnson, through Mr. Weaver, the sexton of Christ Church, Baltimore, for the possession of his brother's remains. An order was issued by the President directing the commandant at the arsenal to exhume and deliver the remains to Mr. Weaver, which was done in a very secret manner, for fear of public interference. The body was taken to a cemetery in Baltimore, where it was buried beside the elder Booth and

other members of the family. The removal was not generally known for a long time afterward. Booth's brain and heart, and some bones that were taken from his leg are on exhibition at the Army Medical Museum at Washington—the same building in which the assassination took place.

The conspiracy resulted as follows: Harold, Payne, Atzerot, and Mrs. Surratt were hung; Arnold, Mudd and McLaughlin were imprisoned for life, and Spangler for six years. Doctor Mudd was pardoned a few years later.

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### **The Catacombs of Paris**

The so-called catacombs of Paris were never catacombs in the ancient sense of the word, and were not devoted to purposes of sepulture until 1784. In that year the Council of State issued a decree for clearing the Cemetery of the Innocents, and for removing its contents, as well as those of other graveyards, into the quarries which had existed from the earlier times under the city of Paris and completely undermined the southern part of the city. April 7, 1786, the consecration of the catacombs was performed with great solemnity, and the work of removal from the cemeteries was immediately begun. The work was all performed by night; the bones were brought in funeral cars, and when they reached the catacombs the bones were shot down the shaft. As the cemeteries were cleared by order of the government, their contents were removed to this place of general deposit. At first the bones were heaped up without order, except that those from each cemetery were kept separate, but in 1810 a regular arrangement was commenced and the skulls and bones were built up along the wall. It is estimated that the remains of 3,000,000 human beings lie in this receptacle. Admission to these Catacombs is forbidden.

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### **New Orleans Cemeteries, Etc.**

As the soil in New Orleans is almost semi-fluid three feet below the surface, there are no graves in the cemeteries, but the dead are all buried in



tombs above ground. Some of these are costly and beautiful structures of marble, iron, etc., but the most are large vaults of masonry, consisting of rows of cells superimposed on each other, generally to the height of seven or eight feet. Each cell is barely large enough to admit the coffin, and is hermetically bricked up at its narrow entrance as soon as the funeral rites have been performed. In most cases a marble tablet appropriately inscribed is placed over the brickwork by which the tomb is closed. These tombs are locally called "ovens." As for cellars, most buildings have none, though a part of the city has been imperfectly drained to admit of shallow excavations for this purpose. The water works of New Orleans, which were constructed in 1836, conduct the river water through the city for domestic purposes. The majority of the dwellings have also cisterns for the reception of rain water, which is generally preferred to the water of the river.

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### **The Origin of the Shot-Tower**

A mechanic in Bristol, England, whose name was Watts, by trade a shot-maker, invented the shot-tower. Watts had to take bars of lead and pound them out into sheets of thickness about equal to the diameter of the shot he desired to make; then he cut the sheets into little cubes, which he rolled in a revolving barrel until the corners were worn off from the constant friction. One night he dreamed he was out, when it began to rain shot—beautiful globules of lead falling at his feet. In the morning when he arose he remembered his dream, and wondered what shape molten lead would take in falling a distance through the air. At last he carried a ladleful of the hot metal up into the steeple of the church of St. Mary of Redcliff, and dropped it into the mote below. Descending, he took from the shallow pool several handfuls of perfect shot. He had conceived the idea of a shot-tower.

### Native Lands of Plants

Spinach is a Persian plant.

Horseradish is a native of England.

Melons were found originally in Asia.

Filberts originally came from Greece.

Quinces originally came from Corinth.

The turnip originally came from Rome.

The peach originally came from Persia.

Sage is a native of the south of Europe.

Sweet marjoram is a native of Portugal.

Damsons originally came from Damascus.

The nasturtium came originally from Peru.

The pea is a native of the south of Europe.

Ginger is a native of the East and West Indies.

The gooseberry is indigenous to Great Britain.

Coriander seed came originally from the East.

Apricots are indigenous to the plains of America.

The cucumber was originally a tropical vegetable.

The walnut is a native of Persia, the Caucasus and China.

Capers originally grew wild in Greece and northern Africa.

Pears were originally brought from the East by the Romans.

The clove is a native of the Malacca Islands, as is also the nutmeg.

Cherries were known in Asia as far back as the seventeenth century.

Garlic came to us first from Sicily and the shores of the Mediterranean.

Asparagus was originally a wild sea-coast plant, and is a native of Great Britain.

The tomato is a native of South America, and it takes its name from a Portuguese word.

Parsley is said to have come from Egypt, and mythology tells us it was used to adorn the head of Hercules.

Apples were originally brought from the East by the Romans. The crab apple is indigenous to Great Britain.

The onion was almost an object of worship with

the Egyptians 2,000 years before the Christian era. It first came from India.

Cloves came to us from the Indies, and take their name from the Latin *clauvis*, meaning a nail, to which they have a resemblance.

The cantaloupe is a native of America, and so called from the name of a place near Rome, where it was first cultivated in Europe.

Lemons were used by the Romans to keep moths from their garments, and in the time of Pliny they were considered an excellent poison. They are natives of Asia.

### Foreign Trade of the United States 1876-1918

| Year<br>Ending<br>June 30 | Exports.      |            | Total<br>Exports. | Imports.      |
|---------------------------|---------------|------------|-------------------|---------------|
|                           | Domestic.     | Foreign.   |                   |               |
| 1876..                    | 525,582,247   | 14,302,424 | 540,384,671       | 460,741,190   |
| 1877..                    | 589,670,224   | 12,804,996 | 602,475,220       | 451,323,126   |
| 1878..                    | 680,709,268   | 14,156,498 | 694,865,766       | 437,051,532   |
| 1879..                    | 698,340,790   | 12,098,651 | 710,439,441       | 445,777,775   |
| 1880..                    | 823,946,353   | 11,692,305 | 835,638,658       | 667,954,746   |
| 1881..                    | 883,925,947   | 18,451,399 | 902,377,346       | 642,664,628   |
| 1882..                    | 733,239,732   | 17,302,525 | 750,542,257       | 724,639,574   |
| 1883..                    | 804,223,632   | 19,615,770 | 823,839,402       | 723,180,914   |
| 1884..                    | 724,964,852   | 15,548,757 | 740,513,609       | 667,697,693   |
| 1885..                    | 726,682,946   | 15,506,809 | 742,189,755       | 577,527,329   |
| 1886..                    | 665,964,529   | 13,560,301 | 679,524,830       | 635,436,136   |
| 1887..                    | 703,022,923   | 13,160,288 | 716,183,211       | 692,319,768   |
| 1888..                    | 683,862,104   | 12,092,403 | 695,954,507       | 723,957,114   |
| 1889..                    | 730,282,609   | 12,118,766 | 742,401,375       | 745,131,652   |
| 1890..                    | 845,293,828   | 12,534,856 | 857,828,684       | 789,310,409   |
| 1891..                    | 872,270,283   | 12,210,527 | 884,480,810       | 844,916,196   |
| 1892..                    | 1,015,732,011 | 14,546,137 | 1,030,278,148     | 827,402,462   |
| 1893..                    | 831,030,785   | 16,634,409 | 847,665,194       | 866,400,922   |
| 1894..                    | 869,204,937   | 22,935,635 | 892,140,572       | 654,994,622   |
| 1895..                    | 793,392,599   | 14,145,566 | 807,538,165       | 731,969,965   |
| 1896..                    | 863,200,487   | 19,406,451 | 882,606,938       | 779,724,674   |
| 1897..                    | 1,032,007,603 | 18,985,953 | 1,050,993,556     | 764,730,412   |
| 1898..                    | 1,210,291,913 | 21,190,417 | 1,231,482,330     | 616,050,654   |
| 1899..                    | 1,203,931,222 | 23,992,086 | 1,227,023,302     | 697,148,489   |
| 1900..                    | 1,370,763,751 | 23,719,511 | 1,394,483,082     | 849,941,184   |
| 1906..                    | 1,717,953,382 | 25,911,118 | 1,743,864,500     | 1,226,562,446 |
| 1910..                    | 1,710,083,998 | 34,900,722 | 1,744,984,720     | 1,557,819,988 |
| 1911..                    | 2,013,549,025 | 35,771,174 | 2,049,320,199     | 1,527,226,105 |
| 1912..                    | 2,170,319,828 | 34,002,581 | 2,204,322,409     | 1,653,264,934 |
| 1913..                    | 2,428,506,358 | 37,371,791 | 2,465,884,149     | 1,813,008,234 |
| 1914..                    | 2,329,684,025 | 34,895,123 | 2,364,579,148     | 1,893,925,657 |
| 1915..                    | 2,716,178,465 | 52,410,875 | 2,768,589,340     | 1,674,169,740 |
| 1916..                    | 4,272,177,579 | 61,305,306 | 4,333,482,885     | 2,197,883,510 |
| 1917..                    | 6,227,164,050 | 62,884,344 | 6,290,048,394     | 2,659,355,185 |
| 1918..                    | 5,847,159,678 | 81,125,863 | 5,928,285,644     | 2,946,059,403 |

### Ancient Engineering Feats

Babel, now called Birs Nimroud, built at Babylon by Belus, was used as an observatory and as a Temple of the Sun. It was composed of eight square towers, one over the other, in all 670 feet high, and the same dimensions on each side on the ground.

The Coliseum at Rome, built by Vespasian for 100,000 spectators, was in its longest diameter 615.5 feet, and in the shortest 510, embraced  $5\frac{1}{2}$  acres, and was 120 feet high.

Eight aqueducts supplied ancient Rome with water, delivering 40 millions of cubic feet daily. That of Claudia was 47 miles long and 100 feet high, so as to furnish the hills. Martia was 41 miles, of which 37 were on 7,000 arches 70 feet high. These vast erections would never have been built had the Romans known that water always rises to its own level.

The Temple of Diana, at Ephesus, was 425 feet long and 225 feet broad, with 127 columns, 60 feet high, to support the roof. It was 220 years in building.

Solomon's Temple, built 1014 B. C., was 60 cubits or 107 feet in length, the breadth 20 cubits or 36 feet, and the height 30 cubits or 54 feet. The porch was 36 feet long and 18 wide.

The largest one of the Egyptian pyramids is 543 feet high, 693 feet on the sides, and its base covers 11 acres. The layers of stones are 208 in number. Many stones are over 30 feet long, 4 broad and 3 thick.

The Temple of Ypsambul, in Nubia, is enormously massive and cut out of the solid rock. Belzoni found in it 4 immense figures, 65 feet high, 25 feet over the shoulders, with a face of 7 feet and the ears over 3 feet.

Sesostris erected in the temple in Memphis immense statues of himself and his wife, 50 feet high, and of his children, 28 feet.

In the Temple of the Sun, at Baalbec, are stones more than 50 feet long, 24 feet thick and 16 broad, each embracing 23,000 cubic feet, cut,



squared, sculptured and transported from neighboring quarries. Six enormous columns are each 72 feet high, composed of 3 stones 7 feet in diameter. Sesostris is credited with having transported from the mountains of Arabia a rock 32 feet wide and 240 feet long.

The engineering appliances used by the ancients in the movement of these immense masses are but imperfectly understood today.

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### **The Big Trees of California**

The big trees of Calaveras and Mariposa Counties, in California, belong to the same genus as the common redwood. This giant of the Sierras is not a handsome tree, either when young or aged; the branches are short, the spray less graceful than the coast redwood, the leaves small and awl-shaped, but the cones are several times larger, and the wood is of a duller reddish hue. The forests were first seen by white men in the spring of 1852, when a hunter named Dowd conducted a party of miners to the locality where the big trees grew. In the several groves where they have been found, there are many trees from 275 to 335 feet high, and from 25 to 34 feet in diameter. The area of Mariposa Grove is two miles square, and it contains 427 of the monster trees. The largest in the Calaveras Grove is "The Keystone State," and is 325 feet high, and its girth six feet from the ground is 45 feet. There are some in the Mariposa Grove which are not so high, but which have a greater circumference, "The Grizzly Giant," for example, being 93 feet at the ground, and over 64 eleven feet above. Some dozen miles south of the Mariposa Grove is the Fresno Grove, which is said to contain about 600 trees, the largest 81 feet in circumference; while about fifty miles north of the Calaveras, in Placer County, a small grove has been discovered. Careful computations have been made of the ages of these trees and some cautious scientists admit, in regard to one of them, that "its age cannot have exceeded 1,300 years!"

**A LIST OF GOOD BOOKS**

In compiling the following list no attempt has been made to name the hundred best books, for such a list would always be open to question. The following books are all of a high standard of merit, and can be recommended to provide diversity, entertainment, instruction, and to cover most branches of literature:

Adam Bede. By George Eliot.

Addison's Essays.

Æsop's Fables.

Alice in Wonderland. By Lewis Carroll.

All Sorts and Conditions of Men. By Sir Walter Besant.

Anderson's Fairy Tales.

Arabian Nights, The.

Autocrat of the Breakfast Table, The. By Oliver Wendell Holmes.

Bacon's Essays.

Barchester Towers. By Anthony Trollope.

Bible, The.

Bible in Spain, The. By George Borrow.

Boswell's Life of Johnson.

Browning, Elizabeth. Poems.

Burns' Poems.

Byron's Childe Harold.

Cloister and the Hearth, The. By Charles Reade.

Compleat Angler, The. By Walton.

Coral Island. By R. M. Ballantyne.

Count of Monte Cristo, The. By A. Dumas.

Cranford. By Mrs. Gaskell.

Cruise of the *Cachalot*, The. By Frank T. Bullen.

David Copperfield. By Dickens.

Deemster, The. By Hall Caine.

Descent of Man, The. By Darwin.

Don Quixote. By Cervantes.

Drink. By Emile Zola.

East Lynne. By Mrs. Henry Wood.

Emerson's Essays.

Far from the Madding Crowd. By Thos. Hardy.

Fox's Book of Martyrs.

Goethe's Faust.

Gibbon's Decline and Fall of the Roman Empire.

Grimm's Fairy Tales.  
Gulliver's Travels. By Dean Swift.  
Handy Andy. By Samuel Lover.  
Helen's Babies. By J. Habberton.  
History of England. By Macaulay.  
Innocents Abroad, The. By Mark Twain.  
Ivanhoe. By Sir Walter Scott.  
Jane Eyre. By Charlotte Bronte.  
John Inglesant. By J. H. Shorthouse.  
Josephus, Works of.  
Kidnapped. By R. L. Stevenson.  
Lambs' Tales from Shakespeare.  
Les Miserables. By Victor Hugo.  
Little Minister, The. By J. M. Barrie.  
Little Women. By L. M. Alcott.  
Livingston's Travels.  
Locke on the Human Understanding.  
Lorna Doone. By R. D. Blackmore.  
Macaulay's Essays.  
Many Cargoes. By W. W. Jacobs.  
Micah Clarke. By Conan Doyle.  
Midshipman Easy. By Marryat.  
Milton's Poems.  
Monsieur Lecoq. By Emil Gaboriau.  
Natural History of Selborne. By Gilbert White.  
Opium Eaters, The. By Thomas De Quincey.  
Ordeal of Richard Feverel, The. By George Meredith.  
Origin of Species, The. By Darwin.  
Past and Present. By T. Carlyle.  
Pickwick Papers. By Dickens.  
Pilgrim's Progress, The. By John Bunyan.  
Prisoner of Zenda, The. By Anthony Hope.  
Resurrection. By Count Tolstoy.  
Robinson Crusoe. By D. Defoe.  
Scarlet Letter. By N. Hawthorne.  
Self Help. By Samuel Smiles.  
Seven Lamps of Architecture, The. By John Ruskin.  
Shakespeare's Works.  
She. By H. Rider Haggard.  
Soldiers Three. By Rudyard Kipling.  
Story of the Heavens. By Sir Robert S. Ball.

Study in Scarlet, A. (Sherlock Holmes). By Sir A. Conan Doyle.

Swiss Family Robinson, The.

Tennyson's Poems.

Tom Brown's School Days. By Thomas Hughes.

Tom Jones. By Harry Fielding.

Treasure Island. By Stevenson.

Twenty Thousand Leagues Under the Sea. By Jules Verne.

Uncle Tom's Cabin. By Mrs. H. Beecher Stowe.

Under the Red Robe. By Stanley Weyman.

Vanity Fair. By W. M. Thackeray.

Vicar of Wakefield, The. By Oliver Goldsmith.

Westward Ho! By Charles Kingsley.

Wordsworth's Poems.

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### Religion of the Presidents

Washington, Garfield, Harrison and McKinley were church members, and all the Presidents, one excepted, were men who revered Christianity. Adams married a minister's daughter, and was inclined to Unitarianism. Jefferson was not a believer; Lincoln and Johnson were liberals. Madison's early connections were Presbyterian. Monroe is said to have favored the Episcopal Church. John Quincy Adams was like his father. Jackson was a Presbyterian and died in the communion of that church. Van Buren was brought up in the Reformed Dutch Church, but afterward inclined to the Episcopal Church. Harrison leaned toward the Methodist Church and Tyler was an Episcopalian. Polk was baptized by a Methodist preacher after his term of office expired. Taylor inclined to the Episcopal communion. Fillmore attended the Unitarian Church and Franklin Pierce was a member of a Congregational church. Buchanan, Benjamin Harrison and Cleveland were Presbyterians. Gen. Grant attended the Methodist Church, President Garfield the Church of the Disciples. Cleveland attended the Presbyterian. McKinley was a Methodist; Roosevelt, Dutch Ref.; Taft, Unitarian; Wilson, Presbyterian; Harding, Baptist.



**Freezing, Melting and Boiling Points**

Degrees of Heat ABOVE ZERO at which the following articles Melt.

|                   |       |
|-------------------|-------|
| Cast Iron .....   | 3,500 |
| Glass .....       | 2,400 |
| Copper .....      | 2,160 |
| Gold .....        | 1,983 |
| Brass .....       | 1,900 |
| Silver .....      | 1,850 |
| Antimony .....    | 950   |
| Zinc .....        | 780   |
| Lead .....        | 590   |
| Bismuth .....     | 476   |
| Tin .....         | 420   |
| Gutta Percha..... | 150   |
| Lard .....        | 96    |
| Ice .....         | 35    |

Degrees of Cold ABOVE ZERO at which the following articles Freeze.

|                            |    |
|----------------------------|----|
| Turpentine (Spirits) ..... | 15 |
| Strong Wine.....           | 20 |
| Milk .....                 | 29 |
| Water .....                | 32 |

Degrees of Heat ABOVE ZERO at which the following articles Boil.

|                   |     |
|-------------------|-----|
| Blood Heat .....  | 98  |
| Alcohol .....     | 175 |
| Water .....       | 210 |
| Petroleum , ..... | 305 |
| Linseed Oil ..... | 600 |
| Quicksilver ..... | 630 |

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**Proportions of Various Compositions in Common Use**

|                        |                                          |
|------------------------|------------------------------------------|
| Babbitt's Metal.....   | Tin 89, Copper 3.7, Antimony 7.3.        |
| Fine Yellow Brass....  | Copper 66, Zinc 34.                      |
| Gun Metal, Valves, &c. | Copper 90, Tin 10.                       |
| White Brass.....       | Copper 10, Zinc 80, Tin 10.              |
| German Silver.....     | Copper 33.3, Zinc 33.4, Nickel 33.3.     |
| Church Bells.....      | Copper 80, Zinc 5.6, Tin 10.1, Lead 4.3. |
| Gongs .....            | Copper 81.6, Tin 18.4.                   |
| Lathe Bushes.....      | Copper 80, Tin 20.                       |
| Machinery Bearings..   | Copper 87.5, Tin 12.5.                   |
| Muntz Metal.....       | Copper 60, Zinc 40.                      |
| Sheathing Metal.....   | Copper 56, Zinc 44.                      |

**Largest Islands in the World**

|                                                   | Area, sq. mi. | Population |
|---------------------------------------------------|---------------|------------|
| New Guinea .....                                  | 313,000       | 634,579    |
| Borneo .....                                      | 290,000       | 700,000    |
| Madagascar .....                                  | 228,570       | 3,000,000  |
| Sumatra .....                                     | 168,000       | 5,000,000  |
| Great Britain .....                               | 87,464        | 46,089,000 |
| Celebes .....                                     | 66,750        | 4,000,000  |
| Java .....                                        | 50,260        | 29,500,000 |
| Saghalien (used as penal<br>settlement only)..... | 47,500        | 13,500     |
| New Zealand—No. Island..                          | 44,750        | 1,100,000  |
| South Island.....                                 | 55,224        |            |
| Cuba .....                                        | 44,200        | 2,627,536  |
| Nippon (Japan).....                               | 42,000        | 2,000,000  |
| Newfoundland .....                                | 40,200        | 257,000    |
| Luzon (Philippines).....                          | 41,000        | 3,800,000  |
| Iceland .....                                     | 40,000        | 85,183     |
| Jesso .....                                       | 35,000        | 163,355    |
| Ireland .....                                     | 31,874        | 5,174,838  |
| Haiti or San Domingo.....                         | 29,830        | 2,500,000  |
| Tasmania .....                                    | 26,215        | 130,541    |
| Ceylon .....                                      | 25,635        | 4,000,000  |
| Tierra del Fuego.....                             | 21,260        | 2,000      |

**Quantity of Seed Required per Acre**

|                   |             |                         |   |      |
|-------------------|-------------|-------------------------|---|------|
| Wheat .....       | 1½ to 2 bu. | Beets .....             | 3 | lbs. |
| Rye .....         | 1½          | Carrots .....           | 2 | "    |
| Oats .....        | 3           | Ruta bagas.....         | ¾ | "    |
| Barley .....      | 2           | Millet .....            | ½ | bu.  |
| Peas .....        | 2 to 3      | Clover, white....       | 4 | qts. |
| White beans....   | 1½          | Clover, red.....        | 6 | "    |
| Buckwheat ....    | ½           | Timothy .....           | 6 | "    |
| Corn, broadcast.. | 4           | Orchard grass...2       |   | bu.  |
| Corn in drills..2 | to 3        | Red top.....1 to 2      |   | pks. |
| Corn in hills...4 | to 8qts.    | Blue grass.....2        |   | bu.  |
| Broom corn....    | ½ bu.       | Mixed lawn grass.1 to 2 |   | "    |
| Potatoes .....    | 10 to 15    | Tobacco .....           | 2 | oz.  |

**Hills in an Acre of Ground**

|                   |           |                  |            |
|-------------------|-----------|------------------|------------|
| 40 feet apart.... | 27 hills. | 8 feet apart.... | 680 hills. |
| 35 " ....         | 35 "      | 6 " ....         | 1,210 "    |
| 30 " ....         | 48 "      | 5 " ....         | 1,732 "    |
| 25 " ....         | 69 "      | 3½ " ....        | 3,556 "    |
| 20 " ....         | 108 "     | 3 " ....         | 4,840 "    |
| 15 " ....         | 193 "     | 2½ " ....        | 6,969 "    |
| 12 " ....         | 302 "     | 2 " ....         | 10,890 "   |
| 10 " ....         | 435 "     | 1 " ....         | 43,560 "   |

### Wood for Fuel

In regard to the relative values of woods as heat-producers, different woods vary some by different methods of experimenting. The most accurate would be their value as steam producers. The following test was made from a fire tubular, horizontal boiler:

|                     |     |                    |    |
|---------------------|-----|--------------------|----|
| Shellbark hickory.. | 100 | Hard maple.....    | 59 |
| Pignut hickory....  | 95  | White elm.....     | 58 |
| White oak.....      | 84  | Red cedar.....     | 56 |
| White ash.....      | 77  | Wild cherry.....   | 55 |
| Dogwood .....       | 75  | Yellow pine.....   | 54 |
| Shrub oak.....      | 73  | Chestnut .....     | 52 |
| White hazel.....    | 72  | Yellow poplar..... | 51 |
| Apple tree.....     | 70  | Butternut .....    | 43 |
| Red oak.....        | 67  | White birch.....   | 43 |
| White beech.....    | 65  | White pine.....    | 30 |
| Yellow oak.....     | 60  |                    |    |

These figures are from air-dried wood. No accurate result could be obtained from greenwood, as it is not in a proper condition, and would vary considerably from any figures made.

### Number of Shrubs or Plants per Acre

| Dist. apart.          | No. of<br>Plants. | Dist. apart.           | No. of<br>Plants. |
|-----------------------|-------------------|------------------------|-------------------|
| 3 inches by 3 inches. | 696,960           | 6 feet by 6 feet.....  | 1,210             |
| 4 inches by 4 inches. | 392,040           | 6½ feet by 6½ feet..   | 1,031             |
| 6 inches by 6 inches. | 174,240           | 7 feet by 7 feet.....  | 881               |
| 9 inches by 9 inches. | 77,440            | 8 feet by 8 feet.....  | 680               |
| 1 foot by 1 foot....  | 43,560            | 9 feet by 9 feet.....  | 537               |
| 1½ feet by 1½ feet.   | 19,360            | 10 feet by 10 feet.... | 435               |
| 2 feet by 1 foot....  | 21,780            | 11 feet by 11 feet.... | 360               |
| 2 feet by 2 feet....  | 10,890            | 12 feet by 12 feet.... | 302               |
| 2½ feet by 2½ feet.   | 6,960             | 13 feet by 13 feet.... | 257               |
| 3 feet by 1 foot....  | 14,520            | 14 feet by 14 feet.... | 222               |
| 3 feet by 2 feet....  | 7,260             | 15 feet by 15 feet.... | 193               |
| 3 feet by 3 feet....  | 4,840             | 16 feet by 16 feet.... | 170               |
| 3½ feet by 3½ feet.   | 3,555             | 16½ feet by 16½ feet.  | 160               |
| 4 feet by 1 foot....  | 10,890            | 17 feet by 17 feet.... | 150               |
| 4 feet by 2 feet....  | 5,445             | 18 feet by 18 feet.... | 134               |
| 4 feet by 3 feet....  | 3,630             | 19 feet by 19 feet.... | 120               |
| 4 feet by 4 feet....  | 2,722             | 20 feet by 20 feet.... | 108               |
| 4½ feet by 4½ feet.   | 2,151             | 25 feet by 25 feet.... | 69                |
| 5 feet by 1 foot....  | 8,712             | 30 feet by 30 feet.... | 48                |
| 5 feet by 2 feet....  | 4,356             | 33 feet by 33 feet.... | 40                |
| 5 feet by 3 feet....  | 2,904             | 40 feet by 40 feet.... | 27                |
| 5 feet by 4 feet....  | 2,178             | 50 feet by 50 feet.... | 17                |
| 5 feet by 5 feet....  | 1,742             | 60 feet by 60 feet.... | 12                |
| 5½ feet by 5½ feet.   | 1,417             | 66 feet by 66 feet.... | 10                |

**Number of Years Seeds Retain Their Vitality**

| Vegetables.         | Years.  | Vegetables.   | Years.  |
|---------------------|---------|---------------|---------|
| Artichoke .....     | 5 to 6  | Melon .....   | 8 to 10 |
| Asparagus .....     | 2 to 3  | Mustard ..... | 3 to 4  |
| Beans .....         | 2 to 3  | Okra .....    | 3 to 4  |
| Beets .....         | 3 to 4  | Onion .....   | 2 to 3  |
| Broccoli .....      | 5 to 6  | Pea .....     | 5 to 6  |
| Cucumber .....      | 8 to 10 | Pumpkin ..... | 8 to 10 |
| Cauliflower .....   | 5 to 6  | Parsley ..... | 2 to 3  |
| Cress .....         | 3 to 4  | Parsnip ..... | 2 to 4  |
| Carrots .....       | 2 to 3  | Pepper .....  | 2 to 3  |
| Celery .....        | 2 to 3  | Rhubarb ..... | 3 to 4  |
| Corn (on cob) ..... | 2 to 3  | Squash .....  | 8 to 10 |
| Endive .....        | 5 to 6  | Spinach ..... | 3 to 4  |
| Egg Plant .....     | 1 to 2  | Turnip .....  | 3 to 6  |
| Leek .....          | 2 to 3  | Tomato .....  | 2 to 3  |
| Lettuce .....       | 3 to 4  |               |         |

---

**Strength of Ice**

| Thickness  | Strength.                            |
|------------|--------------------------------------|
| 2 inches—  | Will support a man.                  |
| 4 inches—  | Will support a man on horseback.     |
| 5 inches—  | Will support an 80-pound gun.        |
| 8 inches—  | Will support a battery of artillery. |
| 10 inches— | Will support an army.                |

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**History of Tin**

Pure tin is an elementary metal, as much so as lead, iron, silver, or gold. The principal tin-producing country is England. The Phœnicians traded with England for tin 1,100 years before the Christian era. There is reason to believe that they got tin from Spain also; but England was depended on for nearly all the tin used in Europe until this ore was discovered in Germany in 1240. It was discovered in Northern Africa, in the Barbary States, in 1640, in India in 1740, in New Spain in 1782. Tin was mined in Mexico before the Spanish conquest, and used in T-shaped pieces for money, and in a bronze composition for sharp tools, the principal mines being at Tasco.



**Population of the United States****Census of 1920**

(For population of the outlying possessions of the United States see page 182.)

|                           |            |
|---------------------------|------------|
| Alabama .....             | 2,348,174  |
| Arizona .....             | 333,903    |
| Arkansas .....            | 1,752,204  |
| California .....          | 3,426,861  |
| Colorado .....            | 939,629    |
| Connecticut .....         | 1,380,631  |
| Delaware .....            | 223,003    |
| District of Columbia..... | 437,571    |
| Florida .....             | 968,470    |
| Georgia .....             | 2,895,832  |
| Idaho .....               | 431,866    |
| Illinois .....            | 6,485,280  |
| Indiana .....             | 2,930,390  |
| Iowa .....                | 2,404,021  |
| Kansas .....              | 1,769,257  |
| Kentucky .....            | 2,416,630  |
| Louisiana .....           | 1,798,509  |
| Maine .....               | 768,014    |
| Maryland .....            | 1,449,661  |
| Massachusetts .....       | 3,852,356  |
| Michigan .....            | 3,668,412  |
| Minnesota .....           | 2,387,125  |
| Mississippi .....         | 1,790,618  |
| Missouri .....            | 3,404,055  |
| Montana .....             | 548,889    |
| Nebraska .....            | 1,296,372  |
| Nevada .....              | 77,407     |
| New Hampshire .....       | 443,083    |
| New Jersey .....          | 3,155,900  |
| New Mexico .....          | 360,350    |
| New York .....            | 10,384,829 |
| North Carolina .....      | 2,559,123  |
| North Dakota .....        | 645,680    |
| Ohio .....                | 5,759,394  |
| Oklahoma .....            | 2,028,283  |
| Oregon .....              | 783,389    |
| Pennsylvania .....        | 8,720,017  |
| Rhode Island .....        | 604,397    |
| South Carolina .....      | 1,683,724  |

|                     |                    |
|---------------------|--------------------|
| South Dakota .....  | 636,547            |
| Tennessee .....     | 2,337,885          |
| Texas .....         | 4,663,228          |
| Utah .....          | 449,396            |
| Vermont .....       | 352,428            |
| Virginia .....      | 2,309,187          |
| Washington .....    | 1,356,621          |
| West Virginia ..... | 1,463,701          |
| Wisconsin .....     | 2,632,067          |
| Wyoming .....       | 194,402            |
| <b>Total .....</b>  | <b>105,708,771</b> |

### White and Negro Populations (1910 Census)

| State.                    | White.    | Negro.    |
|---------------------------|-----------|-----------|
| Alabama .....             | 1,228,832 | 908,282   |
| Arizona .....             | 171,468   | 2,009     |
| Arkansas .....            | 1,131,026 | 442,891   |
| California .....          | 2,259,672 | 21,645    |
| Colorado .....            | 783,415   | 11,453    |
| Connecticut .....         | 1,098,897 | 15,174    |
| Delaware .....            | 171,102   | 31,181    |
| District of Columbia..... | 236,128   | 94,446    |
| Florida .....             | 443,634   | 308,669   |
| Georgia .....             | 1,431,802 | 1,176,987 |
| Idaho .....               | 319,221   | 651       |
| Illinois .....            | 5,526,962 | 109,049   |
| Indiana .....             | 2,639,961 | 60,320    |
| Iowa .....                | 2,209,191 | 14,973    |
| Kansas .....              | 1,634,352 | 54,030    |
| Kentucky .....            | 2,027,951 | 261,656   |
| Louisiana .....           | 941,086   | 713,874   |
| Maine .....               | 739,995   | 1,363     |
| Maryland .....            | 1,062,639 | 232,250   |
| Massachusetts .....       | 3,324,926 | 38,055    |
| Michigan .....            | 2,785,247 | 17,115    |
| Minnesota .....           | 2,059,227 | 7,084     |
| Mississippi .....         | 786,111   | 1,009,487 |
| Missouri .....            | 3,134,932 | 157,452   |
| Montana .....             | 360,580   | 1,834     |
| Nebraska .....            | 1,180,293 | 7,689     |
| Nevada .....              | 74,276    | 513       |

|                     |            |           |
|---------------------|------------|-----------|
| New Hampshire.....  | 429,906    | 564       |
| New Jersey.....     | 2,445,894  | 89,760    |
| New Mexico.....     | 304,594    | 1,628     |
| New York.....       | 8,966,845  | 134,191   |
| North Carolina..... | 1,500,511  | 697,843   |
| North Dakota.....   | 569,855    | 617       |
| Ohio .....          | 4,654,897  | 111,452   |
| Oklahoma .....      | 1,444,531  | 137,612   |
| Oregon .....        | 655,090    | 1,492     |
| Pennsylvania .....  | 7,467,713  | 193,919   |
| Rhode Island.....   | 532,492    | 9,529     |
| South Carolina..... | 679,161    | 835,843   |
| South Dakota.....   | 563,771    | 817       |
| Tennessee .....     | 1,711,432  | 473,088   |
| Texas .....         | 3,204,848  | 690,049   |
| Utah .....          | 366,583    | 1,144     |
| Vermont .....       | 354,298    | 1,621     |
| Virginia .....      | 1,389,809  | 671,096   |
| Washington .....    | 1,109,111  | 6,058     |
| West Virginia.....  | 1,156,817  | 64,173    |
| Wisconsin .....     | 2,320,555  | 2,900     |
| Wyoming .....       | 140,318    | 2,235     |
| <hr/>               |            |           |
| Total.....          | 81,731,957 | 9,827,763 |

### Specific Gravities of Various Metals.

|                       |        |                       |        |
|-----------------------|--------|-----------------------|--------|
| Aluminum .....        | 2.6    | Meteoritic iron.....  | 7.965  |
| Antimony, cast.....   | 6.712  | Lead, cast.....       | 11.352 |
| Arsenic .....         | 5.763  | Lead, milled.....     | 11.4   |
| Bismuth, cast.....    | 9.822  | Mercury, common, at   |        |
| Brass, cast..... {    | 7.8    | 32° .....             | 13.568 |
|                       | 8.4    | Mercury, pure.....    | 14.    |
| Brass wire.....       | 8.544  | Mercury, solid.....   | 15.6   |
| Bronze .....          | 8.218  | Nickel .....          | 8.279  |
| Cobalt, cast.....     | 7.812  | Palladium .....       | 11.8   |
| Copper, cast.....     | 8.788  | Pewter .....          | 7.471  |
| Copper coin.....      | 8.915  | Platinum .....        | { 21.  |
| Copper wire and sheet | 8.878  |                       | { 22.  |
| Gold, coin.....       | 17.647 | Rhodium .....         | 11.    |
| Gold trinket.....     | 15.609 | Silver coin.....      | 10.534 |
| Pure gold, cast.....  | 19.258 | Silver pure, cast.... | 10.744 |
| Pure gold, hammered.  | 19.316 | Steel .....           | { 7.8  |
| Gun metal.....        | 8.784  |                       | { 7.9  |
| Iridium .....         | 23.    | Tin, cast.....        | { 7.3  |
| Iron, wrought..... {  | 7.     |                       | { 7.5  |
|                       | 7.8    | Type Metal.....       | 10.4   |
| Iron, wrought average | 7.698  | Zinc .....            | { 7.19 |
|                       |        |                       | { 6.8  |

## Presidential Elections from 1880

| Year. | Candidates.           | Party.          | Popu-<br>lar<br>Vote. | Elect-<br>oral<br>Vote. |
|-------|-----------------------|-----------------|-----------------------|-------------------------|
| 1880  | James A. Garfield.... | Republican ..   | 4,449,053             | 214                     |
| 1880  | Winfield S. Hancock.. | Democrat ....   | 4,442,035             | 155                     |
| 1880  | James B. Weaver.....  | Greenback ...   | 307,306               | ...                     |
| 1884  | Grover Cleveland..... | Democrat ....   | 4,911,017             | 219                     |
| 1884  | James C. Blaine.....  | Republican ..   | 4,848,334             | 182                     |
| 1884  | Benj. F. Butler.....  | Greenback ...   | 133,825               | ...                     |
| 1884  | John P. St. John..... | Prohibition ..  | 151,809               | ...                     |
| 1888  | Benjamin Harrison...  | Republican ..   | 5,430,607             | 233                     |
| 1888  | Grover Cleveland..... | Democrat ....   | 5,538,045             | 168                     |
| 1888  | Fisk .....            | Prohibition ..  | 257,243               | ...                     |
| 1888  | Labor Vote.....       |                 | 114,623               | ...                     |
| 1892  | Grover Cleveland..... | Democrat ....   | 5,556,918             | 277                     |
| 1892  | Benjamin Harrison...  | Republican ..   | 5,176,108             | 145                     |
| 1892  | Weaver .....          | People's .....  | 1,041,028             | 22                      |
| 1892  | Bidwell .....         | Prohibition ..  | 264,133               | ...                     |
| 1892  | Wing .....            | Labor .....     | 21,164                | ...                     |
| 1896  | William McKinley....  | Republican ..   | 7,105,959             | 271                     |
| 1896  | William J. Bryan..... | Democrat ....   | 6,454,943             | 176                     |
| 1896  | Palmer .....          | Gold Dem....    | 132,878               | ...                     |
| 1896  | Levering .....        | Prohibition ..  | 131,748               | ...                     |
| 1896  | Matchett .....        | Social-Labor .  | 36,260                | ...                     |
| 1900  | William McKinley....  | Republican ..   | 7,220,193             | 292                     |
| 1900  | William J. Bryan..... | Democrat ....   | 6,357,431             | 155                     |
| 1900  | Wooley .....          | Prohibition ..  | 207,125               | ...                     |
| 1900  | Debs .....            | Social Dem....  | 85,344                | ...                     |
| 1904  | Theod. Roosevelt....  | Republican ..   | 7,621,985             | 336                     |
| 1904  | Parker .....          | Democrat ....   | 5,098,225             | 140                     |
| 1904  | Debs .....            | Social Dem....  | 386,955               | ...                     |
| 1904  | Swallow .....         | Prohibition ..  | 254,923               | ...                     |
| 1908  | Wm. H. Taft.....      | Republican ..   | 7,678,908             | 321                     |
| 1908  | William J. Bryan..... | Democrat ....   | 6,409,104             | 162                     |
| 1908  | Eugene V. Debs.....   | Socialist ..... | 420,793               | ...                     |
| 1908  | Eugene Chafin.....    | Prohibition ..  | 253,840               | ...                     |
| 1908  | Thos. E. Watson.....  | People's .....  | 29,100                | ...                     |
| 1908  | August Gillhaus.....  | Social Labor..  | 13,825                | ...                     |
| 1908  | Theo. L. Hisgen.....  | Independent .   | 82,872                | ...                     |
| 1912  | Woodrow Wilson.....   | Democrat ....   | 6,293,019             | 435                     |
| 1912  | Wm. H. Taft.....      | Republican ..   | 3,484,956             | 8                       |
| 1912  | Theo. Roosevelt.....  | Progressive ..  | 4,119,507             | 88                      |
| 1912  | Eugene V. Debs.....   | Socialist ..... | 901,873               | ...                     |
| 1912  | Eugene W. Chafin....  | Prohibition ..  | 207,928               | ...                     |
| 1912  | Arthur E. Reimer....  | Social Labor..  | 29,259                | ...                     |
| 1916  | Woodrow Wilson.....   | Democrat ....   | 9,129,269             | 277                     |
| 1916  | Chas. E. Hughes.....  | Republican ..   | 8,547,328             | 254                     |
| 1916  | Allan J. Benson.....  | Socialist ..... | 590,579               | ...                     |
| 1916  | J. Frank Hanly.....   | Prohibition ..  | 221,329               | ...                     |
| 1916  | Arthur E. Reimer....  | Social Labor..  | 14,180                | ...                     |
| 1920  | Harding .....         | Republican ..   | 16,140,585            | 404                     |
| 1920  | Cox .....             | Democrat ....   | 9,141,621             | 127                     |
| 1920  | Debs .....            | Socialist ..... | 914,980               | ...                     |
| 1920  | Christensen .....     | Farmer-Labor.   | 272,002               | ...                     |
| 1920  | Watkins .....         | Prohibition ..  | 188,678               | ...                     |



## **What Causes Water to Flow Out of an Artesian Well**

The theoretical explanation of the phenomenon is easily understood. The secondary and tertiary geological formations often present the appearance of immense basins, the boundary or rim of the basin having been formed by an upheaval of adjacent strata. In these formations it often happens that a porous stratum, consisting of sand, sandstone, chalk, or other calcareous matter, is included between two impermeable layers of clay, so as to form a flat, porous U tube, continuous from side to side of the valley, the outcrop on the surrounding hills forming the mouth of the tube. The rain filtering down through the porous layer to the bottom of the basin forms there a subterranean pool, which, with the liquid or semi-liquid columns pressing upon it, constitutes a sort of huge natural hydrostatic bellows. Sometimes the pressure on the superincumbent crust is so great as to cause an upheaval or disturbance of the valley. It is obvious, then, that when a hole is bored down through the upper impermeable layer to the surface of the lake, the water will be forced up by the natural law of water seeking its level to a height above the surface of the valley, greater or less, according to the elevation of the level in the feeding column, thus forming a natural fountain on precisely the same principle as that of most artificial fountains, where the water supply comes from a considerable height above the jet.

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## **United States Presidents Not Inaugurated March 4**

George Washington, April 30, 1789; James Monroe, second term, March 5, 1821; John Tyler, April 6, 1841; Zachary Taylor, March 5, 1849; Millard Fillmore, July 10, 1850; Andrew Jackson, April 15, 1865; R. B. Hayes, March 5, 1877; Chester A. Arthur, Sept. 20, 1881; Wm. McKinley, second term, March 5, 1901; Theo. Roosevelt, Sept. 14, 1901.

### The Dimensions of the Great Wall of China, and of What It Is Built

It runs from a point on the Gulf of Liantung, an arm of the Gulf of Pechili in northeastern China, westerly to the Yellow River, thence makes a great bend to the south for nearly 100 miles, and then runs to the northwest for several hundred miles to the Desert of Gobi. Its length is 1,500 miles. For the most of this distance it runs through a mountainous country, keeping on the ridges, and winding over many of the highest peaks. In some places it is only a formidable rampart, but most of the way it is composed of lofty walls of masonry and concrete, or impacted lime and clay, from 12 to 16 feet in thickness, and from 15 to 35 feet in height. The top of this wall is paved for hundreds of miles, and crowded with crenellated battlements, and towers 30 to 40 feet high. In numerous places the wall climbs such steep declivities that its top ascends from height to height in flights of granite steps. An army could march on the top of the wall for weeks and even months, moving in some places ten men abreast.

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### Standard and Local Time

As the standard time sections cover each 15 degrees of longitude, equivalent to one hour, it is evident that standard and local time can agree only in the places lying in the middle of each section, as in Denver, Col., and New Orleans, La. The following table shows approximately how much must be added to (+) or subtracted from (—) standard time to get the local time:

|                       |                         |
|-----------------------|-------------------------|
| Baltimore, Md.....+ 6 | Louisville, Ky.....—18  |
| Boston, Mass.....—16  | New York, N. Y....— 4   |
| Buffalo, N. Y.....+16 | Omaha, Neb.....+14      |
| Chicago, Ill.....— 9  | Philadelphia, Pa...+ 1  |
| Cincinnati, O.....—22 | Pittsburgh, Pa....+20   |
| Cleveland, O.....+27  | Salt Lake City, U...+28 |
| Detroit, Mich.....—28 | San Francisco Cal.+10   |
| Lincoln, Neb.....—22  | Tacoma, Wash....+ 9     |
| Los Angeles, Cal.— 7  | Washington, D. C..+ 8   |

### Civil Service Commission

The purpose of the civil service act, as declared in its title, is "to regulate and improve the civil service of the United States." It provides for the appointment of three commissioners, not more than two of whom shall be adherents of the same political party, and makes it the duty of the commission to aid the President, as he may request, in preparing suitable rules for carrying the act into effect. The act requires that the rules shall provide, among other things, for open competitive examinations for testing the fitness of applicants for the classified service, the making of appointments from among those passing with highest grades, an apportionment of appointments in the departments at Washington among the states and territories, a period of probation before absolute appointment, and the prohibition of the use of official authority to coerce the political action of any person or body. The act also provides for investigations touching the enforcement of the rules, and forbids, under penalty of fine or imprisonment, or both, the solicitation by any person in the service of the United States of contributions to be used for political purposes from persons in such service, or the collection of such contributions by any person in a Government building.

The commission was organized on March 9, 1883. The first classification of the service applied to the departments at Washington and to post offices and customhouses having as many as 50 employees, embracing 13,294 employees. The commission then consisted of three commissioners, the chief examiner, secretary, stenographer, and messenger boy. It is estimated that on June 30, 1918, there were 693,228 officers and employees in the executive civil service, of whom 583,736 held positions subject to competitive examination under the civil service rules. Examinations are held in the principal cities throughout the country through the agency of local boards of examiners, of which there are

approximately 3,000. The members of these boards are detailed from other branches of the service. During the fiscal year ended June 30, 1918, the commission examined 617,894 persons, and of this number 242,173 were appointed.

The commission also holds examinations in Hawaii, Porto Rico, and the Philippine Islands. Under the rules, it is required to render all practicable assistance to the Philippine Civil Service Board.

Appointments of unskilled laborers in the departments at Washington and in the large cities are required to be made in accordance with regulations promulgated by the President, restricting appointments to applicants who are rated highest in physical condition. This system is outside the civil service act, and is auxiliary to the civil service rules.

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### **Kings of Ireland**

This line (or rather lines) of native sovereigns is a very long one; some Irish historians have traced the succession to about the period of the Flood, "before which time there were many princes," but, unfortunately, the records have not been preserved. According to Keating, the first sovereigns after the Milesian Conquest, of whom there is any "absolute certainty," were Heber and Heremon, Milesian princes from Galicia in Spain, who conquered Ireland, and gave to its throne a race of 171 kings. These two princes reigned jointly from the year 1300 B. C. till 1291, when Heremon alone ruled. Of their successors, who reigned from the year 1285 B. C. to the Christian Era, about 169 in number, only 15 died comfortably in their beds; four died of the plague or some malignant distemper, the rest being assassinated, killed in battle, or dying other violent deaths. Home Rule was in existence from the earliest times till after the Conquest of Ireland by Henry II. in 1172; the rulers, however, appear to have had anything but a peaceable, quiet time.



### **How Waste Time Has Been Utilized**

Baxter wrote his "Saint's Everlasting Rest" on a bed of sickness (1615-91).

Bloomfield composed "The Farmer's Boy" in the intervals of shoemaking (1766-1823).

Braman (Joseph), a peasant's son, occupied his spare time when a mere boy in making musical instruments, aided by the village blacksmith. At the age of 16 he hurt his ankle while plowing and employed his time while confined to the house in carving and making woodware. In another forced leisure from a severe fall he employed his time in contriving and making useful inventions, which ultimately led him to fame and fortune (1749-1814).

Bunyan wrote his "Pilgrim's Progress" while confined in Bedford jail (1628-1688).

Burritt (Elihu) made himself acquainted with ten languages while plying his trade as a village blacksmith (Hebrew, Greek, Syriac, Spanish, Bohemian, Polish, Danish, Persian, Turkish, and Ethiopic). His father was a village cobbler, and Elihu had only six months' education, and that at the school of his brother (1811-1879).

Carey, the missionary and Oriental translator, learned the rudiments of Eastern languages while employed in making and mending shoes (1761-1834).

Clement (Joseph), son of a poor weaver, was brought up as a thatcher, but, by utilizing his waste moments in self-education and works of skill, raised himself to a position of great note, giving employment to thirty workmen (1779-1844).

Cobbett learned grammar in the waste time of his service as a common soldier (1762-1835).

D'Aguesseau, the great French chancellor, observing that Mme. D'Aguesseau always delayed ten or twelve minutes before she came down to dinner, began and completed a learned book of three volumes (large quarto) solely during these "waste minutes." This work went through several editions (1668-1751).

Etty utilized indefatigably every spare moment

he could pick up when a journeyman printer (1787-1849).

Ferguson taught himself astronomy while tending sheep in the service of a Scotch farmer (1710-1776).

Franklin, while working as a journeyman printer, produced his "Dissertation on Liberty and Necessity, Pleasure and Pain" (1706-1790).

Miller (Hugh) taught himself geology while working as a mason (1802-1856).

Paul worked as a tentmaker in intervals of travel and preaching.

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### Vassar College

Vassar College is on the east bank of the Hudson, near Poughkeepsie, N. Y. It was founded in 1861. In that year Matthew Vassar, a wealthy brewer of Poughkeepsie, gave to an incorporated board of trustees the sum of \$408,000 and 200 acres of land for the endowment of a college for women. The building was constructed from plans approved by him, at a cost of about \$200,000. The college was opened in September, 1865, with eight professors and twenty other instructors, and three hundred students. The first president of the college was Professor Milo P. Jewett; the second, Dr. John H. Raymond; the third, the Rev. Samuel Caldwell. The college has a fine library, with scientific apparatus and a museum of natural history specimens. It is said to have been the first woman's college to recognize the woman smoker as a fact.

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### How to Engrave On Eggs

The art of engraving on eggs is very puzzling to the uninitiated, but in reality it is very simple. It merely consists in writing upon the egg-shell with wax or varnish, or simply with tallow, and then immersing the egg in some weak acid, such, for example, as vinegar, dilute hydrochloric acid, or etching liquor. Wherever the varnish or wax has not protected the shell, the lime of the latter is decomposed and dissolved in the acid and the writing or drawing remains in relief.

### **Financial Panics of Nineteenth Century**

During the nineteenth century there were four panics, namely in 1837, 1857, 1873, and 1897. In the month of May, 1837, the New York banks suspended and a crash was precipitated which had been impending for some time. The condition of firms and houses of big credit was alarming; many corporations closed up their work, hundreds of business firms were ruined, even States became bankrupt, and the President of the United States could not always obtain his salary when it fell due. The panic was immediately traceable to fever of speculation, and there had been large importations of foreign goods under the compromise tariff act, and much American capital had been driven out of business. The panic of 1857 began with the failure of the "Ohio Life Insurance and Trust Company"; the number of bank failures was very large; public confidence was greatly shaken; land speculation had assumed reckless proportions; "paper" cities were numerous, and many unproductive railroads were undertaken. The panic of 1873 opened Sept. 19 by the failure of Jay Cooke & Co., and it required nearly four years to restore public confidence. The panic of 1907 is recent enough to be familiar to most readers.

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### **Three Black Fridays**

September 24, 1869, Jay Gould and James Fisk, Jr., attempted to create a corner in the gold market by buying all the gold in the banks of New York City, amounting to \$15,000,000. For several days the value of gold rose steadily and the speculators aimed to carry it from 144 to 200. Friday the whole city was in a ferment, the banks were rapidly selling, gold was at 162½ and still rising. Men became insane and everywhere the wildest excitement raged, for it seemed probable that the business houses must be closed, from ignorance of the prices to be charged for their goods. But in the midst of the panic it was reported that Secretary Boutwell of the United States Treasury had thrown \$4,000,000 on

the market, and at once gold fell, the excitement ceased, leaving Gould and Fisk the winners of \$11,000,000. The day noticed above is what is generally referred to as Black Friday in this country, but the term was first used in England, being applied in the first instance to the Friday on which the news reached London that the young Pretender, Charles Edward, had arrived at Derby, creating a terrible panic; and finally to May 11, 1866, when the failure of Overend, Guerney & Co., London, the day before, was followed by a widespread financial ruin.

### Politics of the Presidents

The subjoined table will be found interesting as a reference to many of our readers. Of course the name of Washington heading the list does not mean that he was the candidate of any party or faction, but is placed there to complete the roll:

| Name.                     | Inauguration.     | Politics.  |
|---------------------------|-------------------|------------|
| George Washington.....    | April 30, 1789... | Unanimous  |
| John Adams .....          | March 4, 1797...  | Federal    |
| Thomas Jefferson.....     | March 4, 1801..   | Democrat   |
| James Madison.....        | March 4, 1809..   | Democrat   |
| James Monroe.....         | March 4, 1817..   | Democrat   |
| John Quincy Adams.....    | March 4, 1825..   | Federal    |
| Andrew Jackson.....       | March 4, 1829..   | Democrat   |
| Martin Van Buren.....     | March 4, 1837..   | Democrat   |
| William Henry Harrison... | March 4, 1841..   | Whig       |
| John Tyler .....          | April 6, 1841..   | Whig       |
| James K. Polk.....        | March 4, 1845..   | Democrat   |
| Zachary Taylor.....       | March 5, 1849..   | Whig       |
| Millard Fillmore.....     | July 9, 1850..    | Whig       |
| Franklin Pierce.....      | March 4, 1853..   | Democrat   |
| James Buchanan.....       | March 4, 1857..   | Democrat   |
| Abraham Lincoln .....     | March 4, 1861..   | Republican |
| Andrew Johnson .....      | April 15, 1865..  | Republican |
| U. S. Grant .....         | March 4, 1869..   | Republican |
| R. B. Hayes.....          | March 5, 1877..   | Republican |
| James A. Garfield.....    | March 4, 1881..   | Republican |
| Chester A. Arthur.....    | Sept. 20, 1881..  | Republican |
| Grover Cleveland.....     | March 4, 1885..   | Democrat   |
| Benj. Harrison.....       | March 4, 1889..   | Republican |
| Grover Cleveland.....     | March 4, 1893..   | Democrat   |
| William McKinley.....     | March 4, 1897..   | Republican |
| William McKinley.....     | March 5, 1901..   | Republican |
| Theodore Roosevelt.....   | Sept. 14, 1901..  | Republican |
| William H. Taft.....      | March 4, 1909..   | Republican |
| Woodrow Wilson.....       | March 4, 1913..   | Democrat   |
| Warren G. Harding.....    | March 4, 1921..   | Republican |



### **Area Occupied by, and Early Settlement of the United States**

The greatest length of the territory from the Atlantic to the Pacific Ocean, occupied by the United States, on the parallel of  $42^{\circ}$ , is 2,768 miles; and its greatest breadth, from Point Isabel, Tex., to the northern boundary of North Dakota, is 1,650 miles. The Mexican boundary line is 1,500 miles in length. The boundary line separating the United States from the British possessions is about 3,400 miles long.

The first attempt at civilized settlement, in the United States, was made on the island of Roanoke, off the coast of North Carolina, where a colony from England was placed, under the command of Sir Richard Grenville, in 1585. Having trouble with the Indians, several of the settlers were killed, and the remainder returned to England. In 1587 John White landed a party of 108 persons, and returned to England after founding the city of Raleigh, named after Sir Walter Raleigh. Here Virginia Dare, the first white child native of the United States, was born. In 1590 John White returned with a fleet, but all traces of the colonists, left three years before, had vanished. Their fate has never been ascertained.

In 1540 French fur-traders founded a settlement on Manhattan Island, where the city of New York now stands, but the next year they abandoned the country. A party of Huguenots, driven from France, sought refuge in South Carolina, where they built Port Royal, in 1562; but subsequent famine compelled them to abandon the colony. In 1565 the Spaniards, on the east coast of Florida, founded St. Augustine, the oldest existing town in the United States. The first permanent English settlement was made at Jamestown, Virginia, in 1607; the colony consisting of 105 emigrants, more than one-half of whom died within six months, from privation or at the hands of the Indians. Newly arrived immigrants from England, however, swelled the number of colonists to 200 in the year 1610.

Hendrick Christænsen, a Hollander, in 1612, made a small redoubt enclosing four log huts, as a place in which to live and receive furs, on Manhattan Island, on the site where is now located No. 29 Broadway, New York City. A Dutch settlement, in 1614, was founded at Albany, N. Y. In 1620 the Puritans, a company of British refugees, numbering 102 persons, landed at Plymouth, Mass., at a point known as Plymouth Rock. In 1623 the Virginia colonists, then numbering 2,500, feeling themselves strong enough, attacked the Indians; this resulted in a desultory warfare which continued for 24 years.

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### Julius Cæsar's Wives

Julius Cæsar had four wives. The first was named Cossutia, and he must have married her when very young, for when he was 17 years old, in the year 83 B. C., he divorced her in order to marry Cornelia, the daughter of Cinna, a leader of the democratic party. His aunt Julia having married Marius, the foremost chief of the people's party, young Cæsar was doubly allied to that faction. Sulla, the patrician leader, endeavored to induce the young man to repudiate his wife, and as he would not do this, took from him both his fortune and his office. Sulla was induced by influence to withdraw his proscription, though unwilling, remarking that he saw "in that perfumed youth a hundred Mariuses," but Cæsar did not return to Rome until after the tyrant's death. Cornelia died in 68 B. C., and the following year Cæsar married Pompeia, a relative of Pompey, and a granddaughter of Sulla. She was divorced in B. C. 61, under the following circumstances: The Roman women held annually on the first of May a festival to the Goddess of Earth, or the Bona Dea. No men were allowed to be present at these festivals under pain of death. In the year mentioned the matrons met at the house of Cæsar, and a young man named Publius Clodius managed to obtain admittance in the disguise of a female musician. He was, of course, detected,

and as Pompeia was known to be friendly to the young man, it was supposed that she had connived at the sacrilege, and had admitted the youth for criminal purposes. Cæsar made no charge against either his wife or Clodius, and when the latter was brought to trial for impiety, he would not give any testimony against him; nor would he admit to his friends that he believed the parties to be guilty, but he put away his wife, saying: "The wife of Cæsar should be above suspicion." The last wife of the great Roman was Calpurnia, the daughter of Lucius Piso, whom he married B. C. 59, and who survived him.

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### **The History of Plymouth Rock**

A flat rock near the vicinity of New Plymouth, now Plymouth, Mass., is said to have been the one on which the great body of the Pilgrims landed from the Mayflower. The many members of the colony who died in the winter of 1620-21 were buried near this rock. About 1738 it was proposed to build a wharf along the shore there. At this time there lived in New Plymouth an old man over 90 years of age named Thomas Faunce, who had known some of the Mayflower's passengers when a lad, and by them had been shown the rock on which they had landed. On hearing that it was to be covered with a wharf the old man wept and it has been said that his tears probably saved Plymouth Rock from oblivion. After the Revolution it was found that the rock was quite hidden by the sand washed upon it by the sea. The sand was cleared away but in attempting to take up the rock it was split in two. The upper half was taken to the village and placed in the town square. In 1834 it was removed to a position in front of Pilgrim Hall and inclosed in an iron railing. In September, 1880, this half of the stone was taken back to the shore and reunited to the other portion. A handsome archway was then built over the rock to protect it in part from the depredations of relic hunters.

### Time on Shipboard

On the sea, time is divided into periods called Bells. The first bell is 12:30 a. m.; 2 bells, 1 o'clock; 3 bells, 1:30 p. m.; 4 bells, 2 p. m.; 5 bells, 2:30 p. m.; 6 bells, 3 p. m.; 7 bells, 3:30 p. m., and 8 bells, 4 a. m. It will be observed, therefore, that the time between bells is a half-hour, and that the highest number of bells is eight. The four hours covered by the eight bells are repeated six times in twenty-four hours. The first bell in the second period coming at 4:30 a. m.; the next period, 8:30 p. m.; the next period at 12:30 p. m.; the next period at 4:30 a. m., and the last period at 8:30 a. m. The crew is mustered in two divisions, "the starboard watch" and "the port watch." The day commences at noon. The afternoon watch continues from noon to 4 p. m.; the first dog watch from 4 p. m. to 6 p. m.; second dog watch from 6 p. m. to 8 p. m. First watch from 8 p. m. to midnight; middle watch from 12 to 4 a. m.; morning watch, 4 to 8 a. m.; forenoon watch, 8 a. m. to noon. There are, therefore, seven watches, which the crew keep alternately. The watch which goes on duty at noon one day has the afternoon next day, and the men who have only four hours off duty one night have eight hours the next.

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### Duration of Dreams

It is very certain that the majority of dreams are only of momentary duration, though extended occasionally to the length of a minute.

In proof of this Dr. Sholz tells the following story from his experience: "After excessive bodily fatigue and a day of mental strain of a not disagreeable kind, I betook myself to bed after I had wound my watch and placed it on the night table. Then I lay down beside a burning lamp. Soon I found myself on the high sea on board a well-known ship. I was again young, and stood on the lookout. I heard the roar of water, and golden clouds floated around me. How



long I stood so I did not know, but it seemed a very long time.

"Then the scene changed. I was in the country, and my long-lost parents came to greet me; they sent me to church, where the loud organ sounded. I was delighted, but at the same time wondered to see my wife and children there. The priest mounted the pulpit and preached, but I could not understand what he said for the sound of the organ, which continued to play. I took my son by the hand, and with him ascended the church tower, but again the scene was changed. Instead of being near my son I stood near an early-known but long-dead officer. I ought to explain that I was an army surgeon during the maneuvers. I was wondering why the major should look so young, when quite close in my ears a cannon sounded.

"Terrified, I was hurrying off, when I woke up and noticed that the supposed cannon shot had its cause in the opening of the bedroom door through some one entering. It was as if I had lived through an eternity in my dream, but when I looked at my watch I saw that since I had fallen asleep, not more than one minute had elapsed—a much shorter time than it takes to relate the occurrence."

### Percentage of Alcohol in Various Liquors

|                   |            |                  |       |
|-------------------|------------|------------------|-------|
| Scotch Whisky...  | 54.53      | Currant Wine.... | 20.50 |
| Irish Whisky..... | 53.9       | Port .....       | 22.90 |
| Rum .....         | 53.68      | Madeira .....    | 22.27 |
| Gin .....         | 51.6       | Teneriffe .....  | 19.79 |
| Brandy .....      | 53.39      | Sherry .....     | 19.17 |
| Burgundy .....    | 14.57      | Claret .....     | 15.1  |
| Cape Muscat.....  | 18.25      | Elder .....      | 8.79  |
| Champagne (still) | 13.80      | Ale .....        | 6.87  |
| Champagne (spar-  |            | Porter .....     | 4.02  |
| kling) .....      | 12.61      | Malaga .....     | 17.26 |
| Cider .....       | 5.2 to 9.8 | Rhenish .....    | 12.8  |
| Constantia .....  | 19.75      | Small Beer.....  | 1.28  |
| Gooseberry Wine.  | 11.48      |                  |       |

### **Twelve Great Wonders in America**

City Park, Philadelphia, largest in the world.  
Yellowstone National Park.

Lake Superior, the largest lake in the world.

Mammoth Cave in Kentucky.

Colorado Canon, with walls 6,500 feet high.

Niagara Falls, three-quarters of a mile wide,  
175 feet high.

Natural Bridge over Cedar Creek, in Virginia.

New State Capitol at Albany, N. Y.

New York and Brooklyn Bridge.

The Central Park in New York City.

Washington Monument, Washington, D. C.,  
555 feet high.

Yosemite Valley, California; 57 miles from  
Coulterville. A valley from 8 to 10 miles long  
and about one mile wide. Has very steep slopes  
about 3,500 feet high; has a perpendicular precipice  
3,089 feet high; a rock almost perpendicular,  
3,270 feet high; and waterfalls from  
700 to 1,000 feet high.

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### **The South Sea Bubble**

The "South Sea bubble," as it is generally called, was a financial scheme which occupied the attention of prominent politicians, communities, and even nations, in the early part of the eighteenth century. Briefly, the facts are: In 1711, Robert Hartley, Earl of Oxford, then Lord Treasurer, proposed to fund a floating debt of about £10,000,000 sterling, the interest, about £600,000, to be secured by rendering permanent the duties upon wines, tobacco, wrought silks, etc. Purchasers of this fund were to become also shareholders in the "South Sea Company," a corporation to have the monopoly of the trade with Spanish South America, a part of the capital stock of which was to be the new fund. But Spain, after the treaty of Utrecht, refused to open her commerce to England, and the privileges of the "South Sea Company" became worthless. There were many men of wealth who were stockholders and the company continued to flourish while the ill success of its trading operations

was concealed. Even the Spanish war of 1718 did not shake the popular confidence. Then in April, 1720, Parliament, by large majorities in both houses, accepted the company's plan for paying the national debt, and after that a frenzy of speculation seized the nation and the stock rose to £300 a share, and by August had reached £1,000 a share. Then Sir John Blunt, one of the leaders, sold out, others followed, and the stock began to fall. By the close of September the company stopped payment and thousands were beggared. An investigation ordered by Parliament disclosed much fraud and corruption, and many prominent persons were implicated, some of the directors were imprisoned, and all of them were fined to an aggregate amount of £2,000,000 for the benefit of the stockholders. A great part of the valid assets was distributed among them, yielding a dividend of about 33 per cent.

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### Food in an Egg

An egg contains as much nourishment as a pound and an ounce of cherries, a pound and a quarter of grapes, a pound and a half of russet apples, two pounds of gooseberries and four pounds of pears, and 114 pounds of grapes, 127 pounds of russet apples, 192 pounds of pears, and 327 pounds of plums are equal in nourishment to 100 pounds of potatoes.

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### Races of the World

The six great races of mankind according to Whitaker's Almanac are divided as follows:

| Race.            | Number.       |
|------------------|---------------|
| Mongolian .....  | 655,000,000   |
| Caucasian .....  | 645,000,000   |
| Negro .....      | 100,000,000   |
| Semitic .....    | 81,000,000    |
| Malayan .....    | 52,000,000    |
| Red Indian ..... | 23,000,000    |
| Total .....      | 1,646,000,000 |

### **Postal Savings Statistics**

The first month of the present Postal Savings System's operation, Jan. 1911, showed 48 offices in operation and deposits of \$61,805. In June, 1918, there were 5,948 offices and 730 branches and stations, making 6,678 depositories in all. Depositors numbered 612,188, and total deposits amounted to \$148,471,499, making the average amount on deposit \$242.53. According to preliminary reports, Postal Savings deposits amounted to approximately \$171,870,000 on Jan. 31, 1919, an increase of about \$23,400,000 in seven months, despite the billions paid by the American public for Liberty bonds during that period.

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### **Founding of Noted Colleges**

The University of Oxford has the reputation of having been founded by King Alfred in 872; but it is not confirmed by any documentary evidence.

The University of Paris was founded by King Philip II about 1200.

The first college of the University of Cambridge was founded by Hugo, Bishop of Ely, in 1257.

The first university in the German Empire was at Prague, Bohemia, 1348.

Trinity College, Dublin, was incorporated by royal charter in 1591.

The University of Edinburgh was founded in 1582 by a charter granted by King James VI of Scotland.

Harvard University had its beginning at Newtown, afterward Cambridge, Mass., in 1636.

Yale University had its beginning at Saybrook, Ct., in 1700, and was removed to New Haven in 1716.

William and Mary College; first steps taken toward establishing it in 1617, erected at Williamsburg, Va., and charter granted in 1693.

The first common schools established by legislation in America were in Massachusetts, 1645; but the first town school was opened at Hartford, Ct., prior to 1642.



### **Table Etiquette for Children**

Here are a few good old rules that can safely be followed:

Give the child a seat that shall be strictly its own.

Teach it to take its seat quietly.

To use its napkin properly.

To wait patiently to be served.

To answer promptly.

To say "thank you."

If asked to leave the table for a forgotten article, or for any purpose, to do so at once.

Never to interrupt and never to contradict.

Never to make remarks about the food.

Teach the child to keep his plate in order.

Not to handle the bread nor to drop food on the cloth and floor.

To always say "excuse me, please," to the mother when at home, and to the lady or hostess when visiting, if leaving the table before the rest of the party.

To fold its napkin and to put back its chair or push it close to the table before leaving.

And after leaving the table not to return.

Children who observe every one of these rules are well behaved, delightful companions, and owe it to their mother's careful training.

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### **Porcelain Tower of China**

The beautiful porcelain tower in Nankin, China, was one of the wonders of the world. It was of octagonal form, 260 feet high, in nine stories, each having a cornice and a gallery without. It cost \$4,000,000, and was nineteen years in building, being completed in A. D. 1430. The outer face of this unique structure was covered with slabs of porcelain of various colors, principally green, red, yellow, and white. At every one of its nine stories the projecting roof of the gallery was covered with green tiles, and a bell was suspended from each corner. There were 152 bells in all, which gave sweet sounds when there was a brisk wind. One hundred and twenty-eight

lamps were hung on the outside. On the top was a pinnacle in the shape of a pineapple, surmounted by a gilded ball. A spiral staircase led to the summit. This building was constructed for a gift to the empress, and the government kept it in repair. In 1801 it was struck by lightning and its three upper stories broken or thrown down, but the government repaired the injury. In 1856, however, the Taiping rebels blew it up and carried away the materials, fearing that the magic influence of its bells and lamps would work against the success of their cause.

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### Curiosities of the Bible

The Bible contains 3,566,480 letters, 773,746 words, 31,173 verses, 1,189 chapters, and 66 books. The word "and" occurs 46,277 times. The word "Lord" occurs 1,855 times. The word "reverend" occurs but once, which is in the 9th verse of the 111th Psalm. The middle verse is the 8th verse of the 118th Psalm. The 21st verse of the 7th chapter of Ezra contains all the letters of the alphabet except the letter J. The 19th chapter of II Kings and the 37th chapter of Isaiah are alike. The longest verse is the 9th verse of the 8th chapter of Esther. The shortest verse is the 35th verse of the 11th chapter of St. John. There are no words or names of more than six syllables. In the original Hebrew manuscripts of the Old Testament a division of the matter into paragraphs was early introduced for convenience in reading. Larger divisions into sections suitable for Sabbath readings were made about the middle of the fifteenth century. The gospels were divided into sections for a similar purpose as early as the third century. The present arrangement of the Scriptures into chapters, however, originated in the thirteenth century with Cardinal Hugo, who devised it while making a Latin concordance. The division into verses was introduced by the celebrated printer, Robert Stephens, in his Greek Testament (1551), and in his Latin Bible (1556-7).

### Interest Table

The following will be found convenient in the absence of extended interest tables:

To find the interest on a given sum, for any number of days, at any rate of interest.

|                                                                                                         |    |
|---------------------------------------------------------------------------------------------------------|----|
| At 5 per cent, multiply the principal by the number of days, point off two decimals, and divide by..... | 72 |
| At 6 per cent, as above, and divide by.....                                                             | 60 |
| At 7 per cent, as above, and divide by.....                                                             | 52 |
| At 8 per cent, as above, and divide by.....                                                             | 45 |
| At 9 per cent, as above, and divide by.....                                                             | 40 |
| At 10 per cent, as above, and divide by.....                                                            | 36 |
| At 12 per cent, as above, and divide by.....                                                            | 30 |
| At 15 per cent, as above, and divide by.....                                                            | 24 |
| At 20 per cent, as above, and divide by.....                                                            | 18 |

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### The Wandering Jew

There are various versions of the story of "The Wandering Jew," the legends of whom have formed the foundations of numerous romances, poems and tragedies. One version is that this person was a servant in the house of Pilate and gave the Master a blow as He was dragged out of the palace to go to His death. A popular tradition makes the wanderer a member of the tribe of Naphtali, who, some seven or eight years previous to the birth of the Christ-child, left his father to go with the wise men of the East whom the star led to the lowly cot in Bethlehem. It runs, also, that the cause of the killing of the children can be traced to the stories this person related when he returned to Jerusalem of the visit of the Wise Men, and to the presentation of the gifts they brought to the Divine Infant when he was acknowledged by them to be the king of the Jews. He was lost sight of for a time, when he appeared as a carpenter who was employed in making the cross on which the Saviour was to be lifted up before the eyes of all men. As Christ walked up the way to Calvary He had to pass the workshop of this man, and when He reached its doors, the soldiers, touched

by the sufferings of the Man of Sorrows, besought the carpenter to allow Him to rest there for a little, but he refused, adding insult to a want of charity. Then it is said that Christ pronounced his doom, which was to wander over the earth until the second coming. Since that sentence was uttered he has wandered, courting death, but finding it not, and his punishment becoming more unbearable as the generations come and go. He is said to have appeared in the sixteenth, seventeenth, and even as recently as the eighteenth century, under the names of Cartaphilus and Ahasuerus, by which the Wandering Jew has been known.

### U. S. Educational Statistics

(1916)

|                                                                                      |            |
|--------------------------------------------------------------------------------------|------------|
| Total number of children 5 to 18 years of age.                                       | 26,846,976 |
| Pupils in common schools (enrolled).....                                             | 20,351,687 |
| Pupils in common schools (actually attending) .....                                  | 15,358,927 |
| Pupils in public high schools (boys).....                                            | 660,641    |
| Pupils in public high schools (girls).....                                           | 795,420    |
| Pupils in private high schools (boys).....                                           | 73,415     |
| Pupils in private high schools (girls).....                                          | 81,706     |
| Students in public normal schools (men)....                                          | 21,016     |
| Students in public normal schools (women)..                                          | 83,698     |
| Students in private normal schools (men)...                                          | 1,924      |
| Students in private normal schools (women).                                          | 5,034      |
| Students in universities, colleges, technical schools, etc. (preparatory—men).....   | 33,319     |
| Students in universities, colleges, technical schools, etc. (preparatory—women)..... | 19,155     |
| Students in same (collegiate—men).....                                               | 152,860    |
| Students in same (collegiate—women).....                                             | 90,181     |
| Students in theological schools .....                                                | 12,051     |
| Students in law schools .....                                                        | 22,993     |
| Students in medical schools .....                                                    | 14,767     |
| Students in dental schools .....                                                     | 10,715     |
| Students in pharmacy schools .....                                                   | 6,034      |

### U. S. Church Statistics

Denominational groups with membership of one million or more in 1916:

|                            |            |              |
|----------------------------|------------|--------------|
| Roman Catholic .....       | 15,742,262 | communicants |
| Baptist .....              | 7,236,650  | "            |
| Methodist .....            | 7,165,986  | "            |
| Lutheran .....             | 2,463,265  | "            |
| Presbyterian .....         | 2,257,439  | "            |
| Disciples of Christ.....   | 1,231,404  | "            |
| Protestant Episcopal ..... | 1,098,173  | "            |



### **Tips on Banking**

Your bank is the best commercial reference you can give.

Your money in bank is safe from fire and thieves.

Date your checks the day they are made.

Do not anticipate deposits.

Do not overdraw your bank account; it is illegal.

To stop payment of a check, notify your bank at once, giving number, date, and name of payee.

Certified checks are charged to your account at once by the bank. If not used, they should be re-deposited as cash. To destroy a certified check will cause delay and much trouble to have money refunded.

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### **Origin of Visiting Cards**

As is the case in many other instances, we owe the invention of visiting cards to the Chinese. So long ago as the period of the Tong dynasty (618-907), visiting cards were in common use in China, and that is also the date of the introduction of the "red silken cords" which figure so conspicuously on the engagement cards of that country. From very ancient times to the present day the Chinese have observed the strictest ceremony with regard to the paying of visits. The cards which they use for this purpose are very large, and usually of a bright red color. When a Chinaman desires to marry his parents intimate that fact to a professional "match-maker," who thereupon runs through a list of her visiting acquaintances and selects one whom she considers a fitting bride for the young man; and then she calls upon the young woman's parents, armed with the bridegroom's card, on which are inscribed his ancestral name and the eight symbols which denote the day of his birth. If the answer is an acceptance of his suit, the bride's card is sent in return; and should the oracles prophesy good concerning the union, the particulars of the engagement are written on two large cards, tied together with the red cords.

### **Save a Little**

Every man who is obliged to work for his living should make a point to lay up a little money for that "rainy day" which we are all liable to encounter when least expected. The best way to do this is to open an account with a savings bank. Accumulated money is always safe; it is always ready to use when needed. Scrape together five dollars, make your deposit, receive your bank book, and then resolve to deposit a given sum, small though it be, once a month, or once a week, according to circumstances. Nobody knows without trying it, how easy a thing it is to save money when an account with a bank has been opened. With such an account a man feels a desire to enlarge his deposit. It gives him lessons in frugality and economy, weans him from habits of extravagance, and is the very best guard in the world against intemperance, dissipation and vice.

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### **New York's Nearly 2,000,000,000 Passengers a Year**

The subways, surface and elevated lines in New York City collected 1,975,482,316 fares during the fiscal year ending June 30, 1918, an increase of 56,670,087 over the figures of the previous year, which in turn showed an increase of 20,076,611 over those of the year before. And this increase was in spite of the absence of men caused by the war.

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### **First Aerial Weather Forecast**

The first U. S. aerial weather forecast was issued by the Weather Bureau at Washington on Dec. 2, 1918, in co-operation with the aerial mail service. It was as follows:

"New York to Cleveland—Cloudy, 8 p. m., snow near Lake Erie, winds moderate, northwest to north-northwest east of the Alleghenies up to 6,500 feet, and moderate south winds west of Alleghenies, shifting to west southwest at about 1,500 feet."

### **The Life of Eugene Aram**

Eugene Aram, whose story has been immortalized by Sir Bulwer Lytton, was born at Rams-gill, in Yorkshire, in 1704. At an early age he married and continued his work as a teacher, living at Knaresborough. The sudden and mysterious disappearance of a shoemaker named Clark caused excitement, and finally the conviction of foul play became prevalent, the more because Aram's wife frequently dropped remarks to the effect that Eugene and a man named Houseman knew more about the affair than they cared to admit. In 1759 a skeleton was exhumed near Knaresborough, which was suspected to be Clark's, and Houseman was at once confronted with some of the bones; but he denied vehemently that they were Clark's. Finally, upon Houseman's testimony that Aram and Terry were the murderers, the former was arrested, after the skeleton of Clark had been found in a place designated by Houseman. Aram ably defended himself, and eloquently denounced the practice of conviction on circumstantial evidence, but nevertheless he was sentenced to be hung three days later. Before his execution he confessed his guilt to a minister.

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### **Sending Vessels Over Niagara Falls—When It Was Done and Why**

There have been three such instances. The first in 1827. Some men got an old craft which had been pronounced unseaworthy. They put aboard a bear, a fox, a buffalo, a dog and some geese and sent it over the cataract. The bear jumped from the vessel before it reached the rapids, swam toward the shore and was rescued by some humane persons. The geese went over the falls and came to the shore below alive and, therefore, became objects of great interest and were sold at high prices to visitors at the falls. The dog, fox and buffalo were not heard of or seen again. Another condemned vessel, the *Detroit*, that had belonged to Commodore Perry's victorious fleet, was started over the cataract in

the winter of 1841, but grounded about midway in the rapids and lay there until knocked to pieces by the ice. A picturesque instance was sending a vessel over the Canada side in 1837. It was set on fire, then cut loose from its moorings. All in flames, it went glaring and hissing down the rapids and over the precipice, and smothered its ruddy blaze in the boiling chasm below. This was described as a most magnificent sight.

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### Great Plagues

The whole world visited by a plague, 767 before Christ; in Rome, when 10,000 persons died in a day, 78; in England, 762; in Chichester, when 34,000 died, 772; in Canterbury, 788; in Scotland, which swept away 40,000 inhabitants, 954; in England, 1025, 1247, and 1347; in England, when 50,000 died in London, 1500; in Germany, which cut off 90,000 people, 1348; in Paris and London, very dreadful, 1367; again, 1379; in London, which killed 30,000 persons, 1407; again, when more were destroyed than in fifteen years of war before, 1477; again, when 30,000 died in London, 1499; again, 1548 and 1594; which carried off in London a fourth part of its inhabitants, 1604; at Constantinople, when 200,000 persons died, 1611; at London, when 35,417 died, 1625 and 1631; at Lyons, France, 60,000 died, 1632; again, at London, which destroyed 68,000 persons in 1665; at Messina, February, 1743; at Algiers, 1755; in Persia, when 80,000 persons perished at Passorah, 1773; at Smyrna, that carried off about 20,000 inhabitants, 1784; and at Tunis, 32,000, 1784; in the Levant, 1786; at Alexandria, Smyrna, etc., 1791; in Egypt, in 1792, where near 800,000 died; the yellow fever destroyed 2,000 at Philadelphia, in 1793; on the coast of Africa, particularly at Barbary, 3,000 died daily; at Fez, 247,000 died in June, 1799; 1,800 died at Morocco in 1800, in one day; in Spain and at Gibraltar, where great numbers died, in 1804 and 1805; ten plagues of Egypt, 1494 before Christ.



### **The Education of the Presidents**

Washington—Fair English education.

Adams, John—Harvard.

Jefferson—William and Mary.

Madison—Princeton.

Monroe—William and Mary.

Adams, J. Q.—Harvard.

Jackson—Limited education.

Van Buren—Academic course.

Harrison, W. H.—Hampden College.

Tyler—William and Mary.

Polk—University of North Carolina.

Taylor—Slight rudiments.

Fillmore—Limited education.

Pierce—Bowdoin.

Buchanan—Dickinson.

Lincoln—Education limited.

Johnson—Self-education.

Grant—West Point.

Hayes—Kenyon College.

Garfield—Williams College.

Arthur—Union College.

Cleveland—Hamilton College.

Benj. Harrison—Miami University.

McKinley—Poland Academy.

Roosevelt—Private tutoring; Harvard.

Taft—Yale.

Wilson—Princeton.

Harding—Ohio Central.

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### **Periodic Comets**

The two best known periodic comets, or comets which return to the view of earth at regular intervals, are Halley's and Encke's. The former has been observed since 240 B. C., its return being every 76.8 years. The latest visit of Halley's comet (the 29th historical return) was in April, 1910. Encke's comet pays us more frequent visits than any other, its period being about 40 months. It has been observed regularly, without a single break, from January 1819 to March 1918. It made thirty-one visits during that period.

### Genius of Youth

Handel had produced an opera before he was 15.

Corneille had planned a tragedy before he was 10.

Auber wrote an operetta for the stage before he was 14.

Pitt was Chancellor of the Exchequer before he was 25.

Schiller was widely known as a poet before the age of 20.

Kaulbach at 17 was pronounced the first artistic genius in Germany.

Kant began his philosophical and metaphysical speculations before the age of 18.

Goethe had produced a considerable number of poems and several dramas before he was 20.

Raphael showed his artistic abilities at the early age of 12, when he was widely known as an artist in oil.

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### The World's Great Bells

Russia is in the lead in the line of bells, some of her manufacture being the most famous of the world. It is said that in Moscow alone, before the great fire, there were no fewer than 1,706 large bells. One called the Giant, which was cast in the sixteenth century and broken by falling from its support, and recast in 1654, was so large that it required twenty-four men to ring it; its weight was estimated at 288,000 pounds. It was suspended from an immense beam at the foot of a bell tower, but it again fell during the fire of June 19, 1706, and was a second time broken to fragments, which were used with additional materials in 1732 in casting the King of Bells, still to be seen in Moscow. Some falling timbers in the fire of 1737 broke a piece from its side, which has never been replaced. This bell is estimated to weigh 443,732 pounds; it is nineteen feet three inches high, and measures around the margin sixty feet nine inches. Its value in metal alone is estimated to amount to upward of \$300,-

000. St. Ivan's, also in Moscow, is forty feet nine inches in circumference, sixteen and one-half inches thick, and weighs 127,830 pounds. The bells of China rank next to those of Russia in size. In Pekin there are seven bells, each of which, according to Father Le Compte, weighs 120,000 pounds. The weight of the leading great bells of the world may be seen in the following:

|                              | Pounds. |
|------------------------------|---------|
| King of Bells (Moscow).....  | 443,732 |
| St. Ivan's (Moscow).....     | 127,830 |
| Pekin .....                  | 120,000 |
| Vienna .....                 | 40,200  |
| Olmütz (Bohemia) .....       | 40,000  |
| Rouen (France) .....         | 40,000  |
| St. Paul's .....             | 38,470  |
| "Big Ben" (Westminster)..... | 30,350  |
| Montreal .....               | 28,560  |
| St. Peter's (Rome).....      | 18,600  |

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### Mason and Dixon's Line

A name given to the southern boundary line of Pennsylvania, which formerly separated it from the slave states of Maryland and Virginia. It was run—with the exception of about twenty-two miles—by Charles Mason and Jeremiah Dixon, two English surveyors, between Nov. 15, 1763, and Dec. 26, 1767. During the excited debate in Congress, in 1820, on the question of excluding slavery from Missouri, John Randolph of Roanoke made great use of this phrase, which was caught up and re-echoed by every newspaper in the land.

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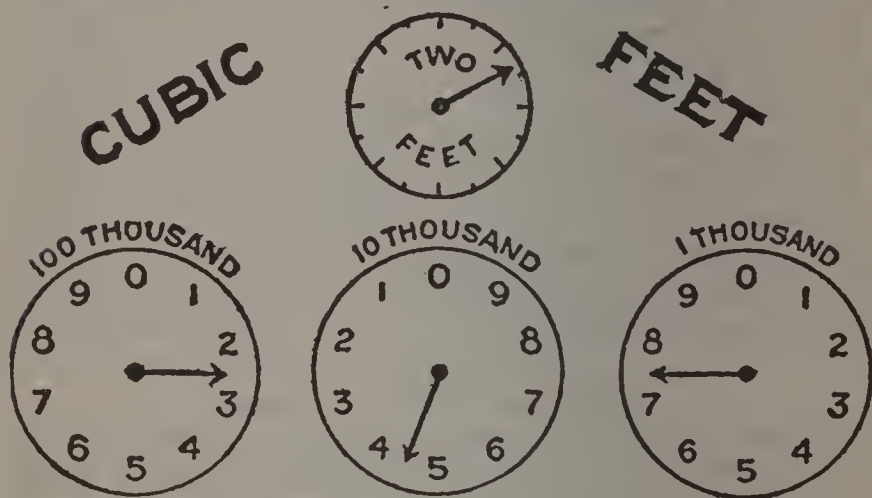
### Fastest Growing Cities

From 1900 to 1910 the fastest growing city in the United States was Oklahoma City, Okla., with a percentage of increase of 539.7; the second was Muskogee, Okla., with a percentage of 494.2. Birmingham, Ala., was third with 245.4 per cent.; Pasadena, Cal., fourth, with 232.2 per cent., and Los Angeles fifth, with 211.5. In all, there were twenty-two cities with increases of more than 100 per cent.

### How to Read Your Own Gas Meter

The three lower dials register the gas consumed. The one on the right hand shows hundreds (to 1,000), the middle dial shows thousands (to 10,000) and the one on the left shows tens of thousands (to 100,000).

## DIALS OF A GAS METER



To read the meter, first note position of hand on left, putting down the smaller of the two figures between which it points; then observe the middle dial and put down the smaller of the two figures the hand points between, then the right hand dial; set this down and add two ciphers. As the above dials stand, the reading is 20 thousand on left dial (2nd 10 thousand), 4 thousand on center dial and 7 hundred on right dial. Thus you set down 2, 4, 7 and add the two ciphers, meaning two ten-thousands, four single thousands and seven hundreds, or 24,700 feet. Note that the hand on center dial moves to the left, others to the right.

By deducting last previous reading from this amount you find the quantity of gas that has passed through the meter since that time.

The little dial above, marked "two feet," is used for testing the pipes for leakage, etc.



### Money

Money first mentioned as a medium of commerce in the twenty-third chapter of Genesis, when Abraham purchased a field as a sepulcher for Sarah, in the year of the world 2139; first made at Argos, 894 before Christ. Silver has increased 30 times its value since the Norman conquest, viz.: a pound in that age was three times the quantity that it is at present, and ten times its value in purchasing any commodity; first coined in the United States, 1652; first paper money, 1690.

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### The Great Kansas Salt Bed

The salt bed in Kansas is 350 feet below the surface, over 300 miles long, twenty-five feet wide, and 400 feet thick. It is composed of the purest quality of rock salt. The present method of procuring the salt is to bore a hole down into the salt, insert a double pipe, and pump down water through the inner tube, which returns through the outer one in the form of concentrated brine, and is then evaporated in enormous open tanks.

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### Formation of Alloys

Mr. W. Hallock finds that many alloys may be prepared by submitting their constituent metals to a temperature slightly above the melting point of the alloy which may be expected to result from their union. Wood's fusible alloy of bismuth, lead, tin, and cadmium may thus be made by heating to 98° or 100° Centigrade the finely-divided metals just pressed together so as to ensure the contact of the constituents.

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### England's Costly Map

The largest map in the world is the ordnance survey map of England, containing over 108,000 sheets, and costing one million dollars a year for twenty years. The scale varies from ten feet to one-eighth of an inch to the mile. The details are so minute that maps having a scale of twenty-five inches "show every hedge, fence, wall, building, and even every isolated tree in the country.

The plans show not only the exact shape of every building, but every porch, area, doorstep, lamp-post, railway and fireplug."

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### **Ancient Clocks**

Clocks, called water-clocks, first used in Rome, in churches, 913; clocks made to strike by the Arabians, 801; by the Italians, 1300; a striking clock in Westminster, 1368; the first portable one made, 1530; none in England that went tolerably, till that dated 1540, maker's name N. O., now at Hampton Court palace; clocks with pendulums, etc., invented by one Fromantil, a Dutchman, about 1556; repeating clocks and watches invented by one Garlow, 1676. Till about 1631, neither clocks nor watches were general.

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### **The Longest Names**

In an appeal to the Privy Council of Madras are the two following words which appear to be names of estates: Arademaravazadeloovazadoovus Kaminagaderhooroosoomokanvogonagira. In the Island of Mull, Scotland, is a locality called Drimtaidhvrikkhillichatan Llanvairpwelgwygyll. The following are names of two employes in the Finance Department of Madrid: Don Epifanio Mirurzurnrdundua y Zinzotita, Don Juan Nepomuceno de Burionagonatotorecagogeazcoecha.

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### **More Light at Less Cost**

According to Dr. Walton Clark, President of Franklin Institute, an American family in 1815 spent, on an average, \$22 a year for sperm oil and candles, which gave approximately 9,000 candle-power hours of illumination. Today the average American city family spends about \$24 a year for electricity and gets 240,000 candle-power hours; while only \$15 a year invested in gas yields twenty times as much light as our forefathers enjoyed a hundred years ago.

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### **One Horsepower**

One horsepower is the strength required to lift 33,000 pounds one foot per minute.

### **Birth Stones**

The American Jewelers' Association recognizes the following birth stones, which will be found to differ from certain similar lists:

January, garnet; February, amethyst; March, aquamarine, bloodstone; April, diamond; May, emerald; June, pearl, moonstone; July, ruby; August, moonstone, peridot; September, sapphire; October, opal, tourmaline; November, topaz; December, turquoise, lapis lazuli.

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### **Trinity Church Property**

In 1638 one Everadus Bogardus married Annetje (or Anneke) Jans, the widow of one Roelof Jans. The lady had inherited from her first husband a farm of sixty-two acres, situated in what is now the center of the business part of New York city. This piece of land was known for many years as "Dominie's Bowery." In 1647 Dominie Bogardus set sail for Holland. The ship was wrecked in Bristol Channel and Bogardus was among the passengers that were lost. Whether it was because his heirs did not pay due attention to attesting their claim to the "Bowery" or whether they were in some way bought off is not now known, but shortly after the taking of the New Netherlands by the British in 1664 we find this land in possession of the government and known as the "King's Farm." In 1705 this tract was granted by the crown to Trinity Church corporation and became the foundation of its great wealth. The descendants of Anneke Jans Bogardus have made many attempts to have their claim to this property recognized by the courts, but without success. As the church's title to the property from the crown is complete it is extremely improbable that the heirs will ever get any part of it.

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### **Recipe for a Good Furniture Polish**

For French polishing, cabinet-makers use: Pale shellac, 1 pound; mastic, 12-5 ounces; alcohol of 90 per cent standard, 1 to 11-15 pints. Dissolve cold, with frequent stirring.

### **Territory Purchased from France**

In 1800 Louisiana was retroceded to France, which, in 1803, sold it to the United States for \$15,000,000. The region comprehended in this purchase included all the country west of the Mississippi River not occupied by Spain, as far north as British territory, and comprises the whole or part of the present States of Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Nebraska, Oregon, Colorado, the Dakotas, Montana, Washington, Oklahoma, Idaho and Wyoming.

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### **Nationality of Civil War Soldiers**

|                              |           | Per Cent |
|------------------------------|-----------|----------|
| Native American .....        | 1,523,300 | 75.48    |
| British America .....        | 53,500    | 2.65     |
| English .....                | 45,500    | 2.26     |
| Irish .....                  | 144,200   | 7.14     |
| German .....                 | 176,800   | 8.76     |
| Other foreigners .....       | 48,400    | 2.38     |
| Foreigners, nativity unknown | 26,500    | 1.33     |
| <hr/>                        |           | <hr/>    |
| Total .....                  | 2,018,200 | 100.00   |

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### **Author of "Nearer, My God, to Thee"**

Mrs. Sarah Flower Adams was the authoress of the grand hymn. This lady was born in Cambridge, England, in the month of February, 1805. Her father was the editor of a weekly Cambridge paper, and the same authority informs us that her mother was a woman of fine gifts and culture. The sweet hymn-writer was the youngest child, and was early noted for the taste which she manifested in literature, and later in life for great zeal and earnestness in her religious life. She is said to have contributed both prose and verse to the periodicals of her day, and to have her criticisms in art matters highly esteemed. She wrote a catechism for children, which was published in the year 1845. She married young, was of frail constitution, but was always, even with many creature complaints, very busy with her literary labor.



### **Safe Method of Removing Superfluous Hair**

The use of pumice-stone is safer and to be preferred to caustic, though it is not permanent, and may need to be repeated. Procure a piece of pumice-stone of a fine grain and not very porous. Prepare for use by cutting the stone into a small square with rounded edges. Then rub it on a hard stone or file until its whole surface is quite smooth. When this is done, rub gently with it the part where the hairs grow, at first once a day, previously dipping the pumice-stone in warm water. One minute's rubbing will generally suffice to remove the hair. If any irritation of the skin ensues, apply a little salad-oil to the part. The rubbings may be made as often as convenient, care being taken not to scrape the skin by too rough application.

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### **Hot Water for Inflamed Eyes**

Hot water is now a remedy so popular and varied in its applications that it is not surprising to hear it recommended for the treatment of inflamed and aching eyes. An American writer, a woman whose eyesight was wonderful, considering her age and the immense amount of labor she performed, attributed it mainly to the custom of bathing her eyes freely in water as hot as could be borne, night and morning, a habit continued for many years.

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### **The Process of Extracting Linseed Oil from Flaxseed**

Flaxseed oil, or linseed oil, is obtained by pressure from the seed of flax. The seeds are usually stripped from the dry flax stalks by a process called "rippling," which is drawing the stalks, a handful at a time, through a set of iron teeth, standing in a row, half an inch at the top and a quarter of an inch at the bottom. The seed bolls are then well dried and threshed and winnowed to remove the outside hull or capsule from the seed. The latter are then ground in mills and the powder is subjected to powerful hydraulic

pressure, which extracts the oil. Sometimes the seed is roasted before grinding because the heat destroys the gummy matter in the interior coating of the seeds. The oil is, therefore, secured more free from mucilage, but it is of a higher color and of more acrid taste than that expressed from the raw seed.

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### **Malleable Glass**

Nori, whose book on glass was published at Florence in 1612, says: "In the time of Tiberius was invented a way of making glass malleable, a thing afterward lost and to this day wholly unknown, for if such a thing were now known, without doubt it would be more esteemed for its beauty and incorruptibility than silver or gold, since from glass there ariseth neither smell or taste, nor any other quality." But though unknown to the old Italian, the art was practiced in Persia, if we may believe Bailey, who says that in 1610 Sophi, Emperor of Persia, sent to King Philip III of Spain six glasses that were malleable and would not break by being hammered, and Blacourt tells that an inventor having presented a bust of malleable glass to Richelieu, 1620, was rewarded for his ingenuity by perpetual imprisonment lest the vested interests of French glass workers should be injured by the new invention.

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### **Cabinet Facts**

There were six Secretaries of State who afterward became Presidents, namely, Jefferson, Madison, Monroe, John Quincy Adams, Van Buren and Buchanan. Monroe was Secretary of War for a short time after he had served in the State Department, and General Grant was Secretary of War ad interim. There have been no Secretaries of Treasury, the Navy, or the Interior, nor any Postmasters or Attorney Generals who have become President. Jeff Davis was Secretary of War under President Pierce. Roosevelt was Assistant Secretary of the Navy and Taft was Secretary of War.

### **The Edge of a Razor**

The thickness of the edge of a razor has been estimated at about one half-millionth of an inch. A powerful microscope shows the edge bent to one side, the effect of the last stroke on the strop. If the razor is used in such a way that the bend is toward the skin, the edge will have a tendency to cut the skin, and if used the other way, it will glide smoothly over the skin, but will pull the hairs upward while cutting them. The last few strokes on the strop should, therefore, be as light as possible, to have only a very light bend of the edge. The constant change in the direction of the bend in stropping makes the edge brittle, "tires" it; it will recover, if left at rest or plunged into boiling water. Razor steel is soft, comparatively speaking. It is tempered at 450 degrees Fahrenheit, while the temperature for axes is 510 degrees, for table knives 530 degrees, for hand saws 600 degrees.

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### **Ink Stains**

To remove ordinary ink stains from fabrics, fingers, or paper, the following treatment is recommended: In many cases lemon juice will prove efficacious. If this fails, try an aqueous solution of oxalic acid (one part to two parts of water), and rub well with a soft cloth. Or use a solution of chloride of tin (one part to three parts of water), or pure dilute muriatic acid (one part to ten parts water). Apply with a camel's hair brush, and then wash in cold water. Where the colors of the fabric are affected by the above treatment, moisten the spots with fresh milk, and cover with fine salt. This should be done before washing. If the fabric is fine and delicate, the stained portions may be dipped in melted tallow, and then pressed for some time between layers of warm pipe clay.

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### **Temperatures**

Fresh water begins to freeze at 32 deg., called the freezing point, but salt water not till 28½ deg.

### Fast Time

Automobile—Ralph De Palma, at Daytona, Fla., in February, 1919, covered a mile in 24.02 seconds—a speed of 149.72 miles an hour.

Aviation—Lieut. Alexander Pearson, Jr., won the army's transcontinental air race in the fall of 1919. His actual flying time from New York to San Francisco and back—5,402 miles—was 48 hours, 37 minutes and 16 seconds—an average speed of 111 miles an hour.

Railroad—The fastest long-distance train is the Century Limited, which on its original schedule covered a 979-mile route between Chicago and New York in 18 hours—an average speed, including all stops, of 54.4 miles an hour.

Steamship—The Mauretania, sister ship of the torpedoed Lusitania, made 28 knots an hour on a trial trip of 300 miles.

Typewriting—William F. Oswald, in a contest held in New York in October, 1919, wrote 147 words in a minute without an error.

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### Noted American Trees

The big trees of California.

"Old Liberty Elm" at Boston.

The "Burgoyne Elm" at Albany, N. Y.

The immense ash trees planted by General Washington at Mount Vernon and now the admiration of visitors.

The weeping willow over the grave of Cotton Mather in Cop's burying-ground near Bunker Hill, taken from a tree that shaded the grave of Napoleon at St. Helena.

The Cary tree, planted by the road side in 1832 by Alice and Phœbe Cary, is a large sycamore, standing on the turnpike from College Hill to Mount Pleasant, Hamilton County, Ohio.

The Washington elm still stands at Cambridge, Mass. It is on Garden street, a short distance from the colleges, and is a large, well-preserved tree. An iron fence is built around it, and on a stone in front is the following inscription: "Under this tree George Washington took command of the American Army, July 3, 1775."



### **Congressmen and Their Speed in Delivery**

Fred Ireland, dean of the official stenographers of the United States House of Representatives, after twenty-seven years of service, recorded his experience thus, according to Jo Mitchell Chapple:

"The worst man to report in my experience was Henry U. Johnson, of Indiana. He used to talk at the rate of 230 words a minute and keep it up for hours. And he spoke frequently, too.

"The greatest speed that I recall was attained by Congressman Metz, of New York. He delivered 250 words a minute, but his speeches were rarely over five minutes in length, and he did not speak often.

"The average rate of the House is about 150 words a minute, which means that the speeches will vary from 100 up to 175 words a minute. And, of course, the rate of a given man's delivery will vary with the intensity of his thought.

"President Wilson talks at about 115 words a minute. His enunciation is clear and his delivery steady. Speaker Clark is a deliberate talker, as was the late Speaker Reed."

The stenographic corps of the Congress of the United States is the model of legislative bodies all over the world. But while the House of Commons, in England, uses twelve men, and the French Chamber of Deputies twenty-four, the House gets along with six stenographers. Each man at the Capitol takes a turn of 1,500 words.

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### **Speed at Which Birds Fly per Hour**

Hawks, 150 miles; sparrows, 92 miles; ducks, 90 miles; falcons, 74 miles; crows, 25 miles.

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### **Formula for Making the Gum That the Government Uses on Postage Stamps**

Dissolve two oz. of dextrin in 5 oz. of hot water, and 1 oz. of acetic acid and 1 oz. spirits of wine.

### Scraps of Information

To find capacity of a cylindrical vessel in gallons, multiply the area in inches by height in inches, and divide product by 231.

To find capacity of four-sided vessel in gallons, find cubical contents by multiplying the length, breadth and height in inches, and divide product by 231.

The U. S. Standard gallon measures 231 cubic inches and contains  $8\frac{1}{3}$  lbs. of distilled water.

A cubic foot of water weighs  $62\frac{1}{2}$  lbs. (salt water 64.3 lbs.) and contains 1,728 cubic inches, or nearly  $7\frac{1}{2}$  gallons U. S. standard.

To evaporate one cubic foot of water requires the consumption of  $7\frac{1}{2}$  lbs. of ordinary coal; or about 1 lb. of coal to one gallon of water.

The average consumption of coal for steam boilers is 12 lbs. per hour for each square foot of grate.

The U. S. standard bushel measures 2150.42 cubic inches, or nearly  $1\frac{1}{4}$  cubic feet.

One cubic foot of anthracite coal weighs about 53 pounds.

One cubic foot of bituminous coal weighs about 47 to 50 lbs.

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### Freezing Point, Contraction, Expansion and Heat Conducting Powers of Various Substances

Mercury freezes at 40 degrees below zero, and melts at 39 degrees. Ether freezes at 47 degrees below zero; wine freezes at 20 degrees; sea water freezes at 28.3 degrees. Alcohol has been exposed to 110 degrees and 120 degrees below zero without freezing. Granite decomposes at a red heat. The second's pendulum, of 39.139 in., is lengthened by 30 degrees of temperature  $\frac{1}{128}$ th of an inch, or 8 vibrations in 24 hours.

The heat conducting powers of metals, etc., are as follows: Gold, 1,000 deg.; platinum, 981 deg.; silver, 973 deg.; copper, 898.2 deg.; iron, 374.3 deg.; zinc, 363 deg.; tin, 303.9 deg.; lead, 179.6 deg.; marble, 23.6 deg.; porcelain, 12.2 deg.; fine clay, 11.4 deg.

# Chronology of the World War

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1914.

- June 28—Archduke Francis Ferdinand and wife assassinated at Sarajevo, Bosnia.
- July 28—Austria-Hungary declares war on Serbia.
- Aug. 1—Germany declares war on Russia; general mobilization begins.
- Aug. 3—Germany declares war on France.
- Aug. 4—Great Britain declares war on Germany; Germany declares war on Belgium.
- Aug. 8—Germans capture Liege.
- Aug. 20—Germans enter Brussels.
- Aug. 23—Japan declares war on Germany; Russians victorious in East Prussia.
- Aug. 26—Louvain destroyed by Germans.
- Aug. 28—British win naval battle off Helgoland.
- Aug. 29—Germans defeat Russians at Allenstein; Germans occupy Amiens.
- Sept. 1—Germans cross the Marne in France; defeat Russians at Tannenberg, East Prussia.
- Sept. 2—Russians capture Lemberg; French government leaves Paris for Bordeaux.
- Sept. 5—England, France and Russia sign compact not to conclude separate peace.
- Sept. 6—Allies win battle of the Marne.
- Sept. 7—Germans retreat from Marne; capture Maubeuge.
- Sept. 7-10—Germans retreat to the Aisne.
- Sept. 14—Battle of the Aisne begins; Allies halted in pursuit of Germans.
- Sept. 15—First battle of Soissons fought.
- Sept. 18—Germans bombard Rheims and damage cathedral.
- Sept. 19—Battle of the Aisne develops into trench warfare.
- Sept. 20—Russians begin siege of Przemyśl.
- Sept. 22—British cruisers Hogue, Cressy and Aboukir torpedoed in North Sea.
- Oct. 9-10—Germans capture Antwerp.
- Oct. 20—Battle of the Yser begins.
- Oct. 29—Turkey begins war on Russia.

Nov. 7—Japanese capture Tsingtao, China.

Nov. 9—German cruiser Emden destroyed.

Dec. 8—British fleet sinks German cruisers near Falkland Islands.

Dec. 9—French government returns to Paris.

Dec. 14—Serbians recapture Belgrade.

Dec. 17—England assumes protectorate over Egypt.

Dec. 25—Italy occupies Avlona, Albania.

### 1915.

Jan. 24—British win naval battle in North Sea, sinking German cruiser Bluecher.

Feb. 12—Germans drive back Russians in East Prussia, taking 26,000 prisoners.

Feb. 19—British and French fleets bombard Dardanelles forts.

March 1—England announces blockade of all German, Austrian and Turkish ports.

March 10—Battle of Neuve Chapelle begins.

March 22—Russians capture Przemyśl.

April 23—Germans force way across Yser Canal.

May 2—Russians repulsed along entire front in East Galicia.

May 7—Lusitania torpedoed by German submarine.

May 23—Italy declares war on Austria and orders mobilization.

June 3—Germans and Austrians recapture Przemyśl.

June 22—Germans and Austrians recapture Lemberg.

July 29—Russians evacuate Warsaw.

Aug. 4—Germans occupy Warsaw.

Aug. 6—British land at Suvla Bay, Gallipoli.

Sept. 5—Grand Duke Nicholas sent to the Caucasus.

Sept. 8—Russians stop German advance at Tarnopol.

Sept. 20—Austrians and Germans begin drive on Serbia.

Sept. 25-30—Battle of the Champagne.

Oct. 9-10—Austro-Germans capture Belgrade.

Oct. 12—Edith Cavell executed by the Germans.



- Oct. 14—Bulgaria declares war on Serbia.  
Nov. 7—Italian liner Ancona sunk.  
Nov. 22—British victory near Bagdad.  
Dec. 8-9—Allies defeated in Macedonia.  
Dec. 15—Sir Douglas Haig succeeds Sir John French as commander of British Army.  
Dec. 30—Liner Persia sunk in the Mediterranean.  
1916.  
Jan. 8—British troops at Kut-el-Amara surrounded.  
Jan. 9—British evacuate Gallipoli peninsula.  
Jan. 13—Cettinje, capital of Montenegro, captured by Austrians.  
Jan. 23—Scutari, capital of Albania, captured by Austrians.  
Jan. 29—Paris raided by Zeppelins.  
Feb. 22—Germans, under the Crown Prince, begin attack on Verdun.  
Feb. 26—Germans capture Fort Douamont, Verdun; French transport La Provence sunk.  
March 8—Germany declares war on Portugal.  
March 15—Austria-Hungary declares war on Portugal.  
March 16—Dutch steamer Tubantia torpedoed; Admiral von Tirpitz resigns.  
March 18-30—Russian offensive in Riga region.  
March 24—Channel steamer Sussex torpedoed and sunk.  
April 5-7—Battle of St. Eloi.  
April 17—Berbizonde captured by Russians.  
April 18—President Wilson sends final word to Germany.  
April 19—President Wilson in speech before joint session of Congress explains diplomatic situation.  
April 20—Russian soldiers land in France.  
April 21—Sir Roger Casement lands in Ireland and is arrested.  
April 24—Insurrection in Dublin.  
April 29—British force at Kut-el-Amara surrenders to Turks.  
April 30—Irish insurrection suppressed.  
May 4—Germany promises the United States to change method of submarine warfare.

- May 13—Food riots reported in Berlin.
- May 15—Austrians begin strong offensive against Italians in Trentino.
- May 30—Remainder of Serbian army transferred to Saloniki.
- May 31—Great naval battle off Jutland, British main fleet driving German main fleet back to base.
- June 5—Lord Kitchener lost with cruiser Hampshire.
- June 6—Italians stop Austrians and drive them back.
- July 1—British and French begin great offensive on the Somme.
- July 6—David Lloyd George appointed secretary of war of Great Britain.
- July 9—German merchant submarine Deutschland arrives at Baltimore.
- Aug. 3—Sir Roger Casement executed for treason.
- Aug. 9—Italians take Goritz by assault.
- Aug. 27—Italy formally declares war against Germany.
- Aug. 28—Roumania declares war against Austria-Hungary.
- Sept. 9—French recapture Fort Douamont in swift attack.
- Sept. 26—French and British take Combles; British take Thiepval and Gueudecourt.
- Sept. 28—Venizelos proclaims provisional government in Greece; to aid Allies.
- Oct. 11—Germans defeat Roumanians in Alt Valley and begin invasion of Roumania.
- Oct. 13—Italians win victory on Carso plateau.
- Nov. 13—British win battle of Ancre.
- Nov. 19—Monastir taken by Serbs, French and Italians.
- Nov. 25—Greek provisional government declares war on Germany.
- Nov. 28—Seat of Roumanian government removed from Bucharest to Jassy.
- Dec. 12—Germany proposes peace negotiations.
- 1917.
- Jan. 31—Germany announces that beginning

Feb. 1 she will sink all merchant ships without warning.

Jan. 31—Germany notifies United States of conditions under which she will allow our ships to traverse the war zone.

Feb. 3—United States breaks relations with Germany.

Feb. 3—United States steamship Housatonic sunk.

Feb. 3—United States demands release of Yarrowdale prisoners.

Feb. 10—American Ambassador Gerard leaves Berlin.

Feb. 15—Berlin advises Yarrowdale prisoners have been released.

Feb. 26—President Wilson addresses Congress asking authority to arm merchant ships; step killed by Senate filibuster. British continue advance along Ancre River on 11-mile front.

Feb. 26—British capture Kut-el-Amara in Asia Minor.

March 3—British advance on 5-mile front northwest of Bapaume.

March 5—Germans launch big attack on Verdun.

March 11—British capture Bagdad.

March 13—Germans abandon main defenses on 3½-mile front west of Bapaume.

March 14—Russians capture Kermanshah, Asia Minor.

March 15—Czar Nicholas of Russia abdicates after being deposed by revolution.

March 17—British capture Bapaume; French capture Roye and Lassigny.

March 18—Germans make great "strategic retreat," retiring on 85-mile front, abandoning Peronné, Chaulnes, Nesle and Noyon. Allies advance line Arras to Soissons to depth of 12 miles and retake 60 villages.

April 6—United States declares war on Germany.

May 4—French capture Craonne and German first line trenches northwest of Rheims.

May 6—French clear all but small sector of Chemin des Dames.

- May 13—Italians take offensive against Austrians on Isonzo front.
- May 16—United States announces safe arrival of torpedo boats in European waters to co-operate with British fleet.
- May 17—Italians cross Isonzo; British capture Bullecourt.
- May 18—Army conscription bill signed by President Wilson.
- June 5—Registration day under U. S. army conscription act.
- June 20—Italians resume offensive in Trentino.
- June 26—Canadians capture La Coulotte.
- June — All contingents of General Pershing's army arrive safely in France and go into training.
- July 1-2—Russians under Kerensky resume drive toward Lemberg.
- July 10—Russians take Halicz.
- July 12—Russians take Kalusz.
- July 20—Drawing for United States draft army at Washington.
- July 22—Russians retreat in northern Galicia as mutiny spreads.
- July 31—French and British smash German lines in Belgium on 25-mile front from Dixmude to Warneton, taking 10 towns.
- Aug. 20—French break German line on 11-mile front north of Verdun.
- Aug. 23—Canadians take important German positions south of Lens; Russians evacuate Riga.
- Sept. 3—Germans occupy Riga.
- Sept. 5—First contingent of U. S. draft army arrives at cantonments.
- Sept. 14—Russian provisional government proclaims a republic.
- Sept. 29—Italians gain ground by surprise attack above Gorizia.
- Oct. 4—British win crest of Passchendaele.
- Oct. 6—Congress adjourns after appropriating \$21,000,000,000 for war.
- Oct. 9—British drive Germans from Poelcapelle.
- Oct. 13—Germans land on Oesel and Dago Islands, Gulf of Riga.



- Oct. 17—U. S. transport Antilles sunk homeward bound.
- Oct. 22—British capture important positions southeast of Poelcapelle.
- Oct. 23—French smash German lines on Aisne, taking Malmaison fort.
- Oct. 24—Austro-German offensive against Italy begun.
- Oct. 25—Germans retreat 15 miles on Riga front; civilians evacuate Kronstadt.
- Oct. 25—Teutons extend gains on Isonzo front, northern Italy.
- Oct. 26—Brazil declares war on Germany.
- Oct. 27—Officially announced American troops are in French first line trenches.
- Oct. 28—Teutons take Gorizia and Cividale, northern Italy.
- Oct. 29—Italian Isonzo front collapses, army retiring to Tagliamento River.
- Nov. 1—British and French reach Italian front.
- Nov. 1—British take Beersheba, Palestine.
- Nov. 2—Germans driven from hilly portions of Chemin des Dames.
- Nov. 3—Italians abandon eastern bank of Tagliamento River.
- Nov. 3—First American casualties announced, three killed, 11 wounded, in trench raid.
- Nov. 6—Canadians take Passchendaele.
- Nov. 6—Italians abandon entire Tagliamento line.
- Nov. 7—Teutons reach line of Livenza River, northern Italy.
- Nov. 8—Bolsheviki seize Petrograd, overthrow Kerensky and announce purpose of negotiating separate peace.
- Nov. 9—Teutons advance toward Piave River, northern Italy; General Cadorna replaced by General Diaz in supreme Italian command.
- Nov. 14—Kerensky flees from Petrograd.
- Nov. 15—Italians repulse Teuton attempts to cross Piave River.
- Nov. 16—Italians open floodgates of Piave and Sile Rivers to save Venice.
- Nov. 18—British take Jaffa, Palestine.
- Nov. 18—Rioting reported in Berlin.

- Nov. 21—British, under Gen. Byng, in gigantic offensive aided by tanks, smash German "Hindenburg Line" on 32-mile front St. Quentin to Scarpe River, advancing toward Cambrai; 5,000 prisoners.
- Nov. 23—Russians begin demobilizing army.
- Nov. 30—Safe arrival in France of "Rainbow Division," first National Guard contingent.
- Dec. 1—Inter-allied war council meets in Paris.
- Dec. 2—Russian Bolsheviki open negotiations for truce with Germany.
- Dec. 4—President Wilson addresses Congress, calling for war on Austria and pledging United States to fight for victory.
- Dec. 6—Part of Halifax destroyed by munition ship explosion.
- Dec. 7—United States declares war on Austria.
- Dec. 10—Jerusalem captured by British.
- Dec. 11—Panama declares war on Austria.
- Dec. 16—Russians sign truce with Germany for 28 days.
- Dec. 17—Canada votes for conscription.
- Dec. 23—Germany and Russia open peace negotiations.
- Dec. 23—Bethlehem captured by British.
- Dec. 28—United States takes control of railways for war.
- Dec. 28—Allies indicate they will reject German peace feelers.

## 1918.

- Jan. 2—French win victory over Austro-Germans on Italian front.
- Jan. 3—Hitch in Russo-German parleys due to German demands.
- Jan. 7—U. S. Supreme Court upholds draft law; Russians reopen peace parley.
- Jan. 8—President Wilson restates U. S. war aims.
- Jan. 9—Reported crowds in German cities march, demanding peace.
- Jan. 14—Russo-German armistice extended to Feb. 18.
- Jan. 15—Crisis over war aims in Germany growing; crowds break up Junker meetings.
- Jan. 16—U. S. Fuel Administration orders five-

day shutdown of industry and ten heatless Mondays.

Jan. 18—Strikes and riots reported throughout Austria-Hungary.

Jan. 18—Bill introduced in U. S. Senate providing for supreme war cabinet leads to violent controversy.

Jan. 25—Germany rejects our war aims; Austria conciliatory.

Jan. 25—United States troops in action on western front.

Jan. 26—German Socialists warn government of overthrow.

Jan. 29—Forty-seven killed in London air raids.

Jan. 29—War Department charges Germany with violating truce with Russia by transferring troops to western front.

Jan. 29—Italians open drive on Asiago, take 1,500 prisoners.

Jan. 30—Sixteen former German and Austrian ships reach France safely with American troops.

Jan. 31—Twenty killed in Paris air raid.

Feb. 4—German aliens in United States registered.

Feb. 4—Germans concentrating in west for great drive.

Feb. 6—Transport Tuscania torpedoed; 267 U. S. soldiers lost.

Feb. 7—Bolsheviki refuse German demands for immediate peace.

Feb. 8—Heatless Mondays abandoned.

Feb. 9—Ukrainia signs peace with Germany; first peace of war.

Feb. 11—Russia declares state of war at end; disbands army.

Feb. 11—Roumania declares she will live or die with allies.

Feb. 18—Germany resumes war on Russia; begins drive east.

Feb. 19—Bolsheviki accept German terms but drive continues.

Feb. 19—Great Britain and U. S. sign army draft treaty.

- Feb. 22—American troops capture first German prisoners.
- Feb. 25—Germany replies to allies' peace terms, as usual in crafty generalities.
- Feb. 26—Allied embassy staffs leaving Petrograd.
- Feb. 28—Friction reported between Austria and Germany over Russian drive.
- March 2—Treaty of peace with Germany signed by bolsheviki at Brest-Litovsk.
- March 4—Germany and Roumania sign armistice on German terms.
- March 13—German troops occupy Odessa.
- March 14—All-Russian congress of soviets ratifies peace treaty.
- March 21—German spring offensive starts on fifty mile front.
- March 23—German drive gains nine miles. "Mystery gun" shells Paris.
- March 24—Germans reach the Somme, gaining fifteen miles. American engineers rush to aid British.
- March 25—Germans take Bapaume.
- March 27—Germans take Albert.
- April 16—Germans capture Messines ridge, near Ypres; Bolo Pasha executed.
- April 23—British and French navies "bottle up" Zeebrugge.
- May 10—British navy bottles up Ostend.
- May 27—Germans begin third phase of drive on west front; gain five miles.
- May 29—Germans take Soissons and menace Reims. American troops capture Cantigny.
- May 30—Germans reach the Marne, fifty-five miles from Paris.
- June 1—Germans advance nine miles; are forty-six miles from Paris.
- June 3—Five German submarines attack U. S. coast and sink eleven ships.
- June 5—U. S. marines fight on the Marne near Chateau Thierry.
- June 9—Germans start fourth phase of their drive by advancing toward Noyon.
- June 10—Germans gain two miles. U. S. marines capture south end of Belleau wood.



- June 12—French and Americans start counter-attack.
- June 15—Austrians begin another drive on Italy and take 16,000 prisoners.
- June 22—Italians defeat Austrians on the Piave.
- June 23—Austrians begin great retreat across the Piave.
- July 18—Gen. Foch launches allied offensive with French, American, British, Italian and Belgian troops.
- July 21—Americans and French capture Chateau Thierry.
- July 30—German crown prince flees from the Marne and withdraws army.
- Aug. 2—Soissons recaptured by Foch.
- Aug. 4—Americans take Fismes.
- Aug. 5—American troops landed at Archangel.
- Aug. 16—Bapaume recaptured.
- Aug. 28—French recross the Somme.
- Sept. 1—Foch retakes Peronne.
- Sept. 12—Americans launch successful attack in St. Mihiel salient.
- Sept. 29—Allies cross Hindenburg line.
- Sept. 30—Bulgaria surrenders after successful allied campaign in Balkans.
- Oct. 6—Germany asks President Wilson for armistice.
- Oct. 8—President Wilson reopens armistice.
- Oct. 9—Allies capture Cambrai.
- Oct. 11—American transport Otranto torpedoed and sunk; 500 lost.
- Oct. 13—Foch's troops take Laon and La Fere.
- Oct. 14—British and Belgians take Roulers; President Wilson demands surrender by Germany.
- Oct. 17—Allies capture Lille, Bruges, Zeebrugge, Ostend and Douai.
- Oct. 18—Czecho-Slovaks issue declaration of independence; Czechs rebel and seize Prague, capital of Bohemia; French take Thielt.
- Oct. 19—President Wilson refuses Austrian peace plea and says Czecho-Slovak state must be considered.
- Oct. 27—German government asks President Wil-

son to state terms.

Oct. 28—Austria begs for separate peace.

Oct. 29—Austria opens direct negotiations with Secretary Lansing.

Oct. 30—Italians inflict great defeat on Austria; capture 33,000; Austrians evacuating Italian territory.

Oct. 31—Turkey surrenders; Austrians utterly routed by Italians; lose 50,000; Austrian envoys, under white flag, enter Italian lines.

Nov. 1—Italians pursue beaten Austrians across Tagliamento river; allied conference at Versailles fixes peace terms for Germany.

Nov. 3—Austria signs armistice amounting virtually to unconditional surrender.

Nov. 4—Allied terms are sent to Germany.

Nov. 7—Germany's envoys enter allied lines by arrangement.

Nov. 9—Kaiser Wilhelm abdicates and Crown Prince renounces throne.

Nov. 11—Armistice terms signed by Germany, and fighting ceases at 11 A. M. all along the line. President Wilson announces to Congress that "the war thus comes to an end." Great peace celebrations held in all the Allied countries.

### 1919.

Jan. 18—Peace conference begins in Paris, with 27 nations represented.

June 28—Germans sign peace treaty.

July 10—Treaty laid before U. S. Senate.

Sept. 10—Austrians sign peace treaty.

Oct. 7—Treaty ratified by Italy.

Oct. 10—Treaty ratified by Great Britain.

Oct. 21—Treaty ratified by France.

Oct. 30—Treaty ratified by Japan.

Nov. 19—Treaty rejected by U. S. Senate.

Nov. 27—Bulgarians sign peace treaty.

### 1920.

Jan. 12—Principal powers, with exception of United States, declare peace and accept covenant of League of Nations.

Jan. 17—League of Nations comes into being in Paris. U. S. not represented.

**Nations in World War****Dates of Their Entry****Allies**

|                        |               |
|------------------------|---------------|
| 1. Serbia.....         | July 28, 1914 |
| 2. Russia*.....        | Aug. 1, 1914  |
| 3. France.....         | Aug. 3, 1914  |
| 4. Gt. Britain.....    | Aug. 4, 1914  |
| 5. Belgium....         | Aug. 4, 1914  |
| 6. Montenegro.....     | Aug. 9, 1914  |
| 7. Japan.....          | Aug. 23, 1914 |
| 8. Italy.....          | May 23, 1915  |
| 9. San Marino.....     | May 23, 1915  |
| 10. Portugal....       | Mar. 9, 1916  |
| 11. Roumania.....      | Aug. 27, 1916 |
| 12. Greece.....        | Nov. 28, 1916 |
| 13. United States..... | Apr. 6, 1917  |
| 14. Cuba.....          | April 7, 1917 |
| 15. Panama.....        | April 7, 1917 |
| 16. Siam.....          | July 21, 1917 |
| 17. Liberia.....       | Aug. 4, 1917  |
| 18. China.....         | Aug. 14, 1917 |
| 19. Brazil.....        | Oct. 26, 1917 |

**The Enemy**

|                    |               |               |
|--------------------|---------------|---------------|
| 1. Austria-Hungary | .....         | July 28, 1914 |
| 2. Germany..       | Aug. 1, 1914  |               |
| 3. Turkey...       | Nov. 23, 1914 |               |
| 4. Bulgaria..      | Oct. 14, 1915 |               |

\*Withdrew before armistice.

**Wealth of Nations at War**

|                                                | Total             | Per Capita |
|------------------------------------------------|-------------------|------------|
| United States .....                            | \$250,000,000,000 | \$2,404    |
| Great Britain .....                            | 90,000,000,000    | 1,915      |
| Canada .....                                   | 7,500,000,000     | 834        |
| India and other British pos-<br>sessions ..... | 32,500,000,000    | 84         |
| British Empire in all.....                     | 130,000,000,000   | 300        |
| France .....                                   | 65,000,000,000    | 1,625      |
| Russia (withdrawn) .....                       | 60,000,000,000    | 343        |
| Italy .....                                    | 30,000,000,000    | 833        |
| Japan .....                                    | 25,000,000,000    | 347        |
| China .....                                    | 25,000,000,000    | 62         |
| Belgium .....                                  | 9,000,000,000     | 1,200      |
| Portugal .....                                 | 3,500,000,000     | 560        |
| Roumania and Serbia.....                       | 3,500,000,000     | 277        |
| Cuba and Panama.....                           | 1,000,000,000     | 330        |
| <hr/> Total, Allies .....                      |                   | \$ 462     |
| Germany .....                                  | \$ 85,000,000,000 | \$1,215    |
| Austria-Hungary .....                          | 40,000,000,000    | 756        |
| Turkey and Bulgaria.....                       | 4,000,000,000     | 148        |
| <hr/> Total, the Enemy.....                    |                   | \$ 872     |
| <hr/> GRAND TOTAL .....                        |                   | \$ 505     |

The combined wealth of the allied nations was almost five to one greater than that of the enemy nations. After deducting Russia it was over four to one.

# Declarations of War

The following table from the U. S. official "War Cyclopedia" shows the dates at which the World War, or breach of diplomatic relations (the latter being designated by ‡ in the following table) involved the various countries:

|                             | Germany         | Austria-Hungary | Turkey        | Bulgaria      |
|-----------------------------|-----------------|-----------------|---------------|---------------|
| Belgium.....                | *Aug. 4, 1914   | *Aug. 28, 1914  |               |               |
| Bolivia.....                | ‡April 13, 1917 |                 |               |               |
| Brazil.....                 | Oct. 26, 1917   |                 |               |               |
| China.....                  | Aug. 14, 1917   | Aug. 14, 1917   |               |               |
| Costa Rica.....             | ‡Sept. 21, 1917 |                 |               |               |
| Cuba.....                   | April 7, 1917   |                 |               |               |
| Ecuador.....                | ‡Dec. 8, 1917   |                 |               |               |
| France.....                 | *Aug. 3, 1914   | Aug. 12, 1914   | Nov. 5, 1914  | Oct. 18, 1915 |
| Great Britain.....          | Aug. 4, 1914    | Aug. 12, 1914   | Nov. 5, 1914  | Oct. 15, 1915 |
| Greece.....                 | July 2, 1917    | July 2, 1917    |               | July 2, 1917  |
| Provisional Government..... | Nov. 28, 1916   |                 |               | Nov. 28, 1916 |
| Guatemala.....              | ‡April 28, 1917 |                 |               |               |
| Haiti.....                  | ‡June 17, 1917  |                 |               |               |
| Honduras.....               | ‡May 17, 1917   |                 |               |               |
| Italy.....                  | Aug. 27, 1916   | May 23, 1915    | Aug. 20, 1915 | Oct. 19, 1915 |
| Japan.....                  | Aug. 23, 1914   | *Aug. 27, 1914  |               |               |
| Liberia.....                | Aug. 4, 1917    |                 |               |               |
| Montenegro.....             | Aug. 9, 1914    | Aug. 7, 1914    |               |               |
| Nicaragua.....              | ‡May 18, 1917   |                 |               |               |
| Panama.....                 | April 7, 1917   | Dec. 10, 1917   |               |               |
| Peru.....                   | ‡Oct. 6, 1917   |                 |               |               |
| Portugal.....               | *March 8, 1916  | *March 15, 1916 |               |               |



## Declarations of War—Continued

|                    |       |          |      |           |      |           |      |          |
|--------------------|-------|----------|------|-----------|------|-----------|------|----------|
| Roumania.....      | *Aug. | 28, 1916 | Aug. | 27, 1916* | Aug. | 31, 1916* | Aug. | 31, 1916 |
| Russia.....        | *Aug. | 1, 1914* | Aug. | 6, 1914   | Nov. | 3, 1914   | Oct. | 19, 1915 |
| San Marino.....    |       |          | May  | 24, 1915  |      |           |      |          |
| Serbia.....        | Aug.  | 9, 1914* | July | 28, 1914  | Dec. | 2, 1914*  | Oct. | 14, 1915 |
| Siam.....          | July  | 22, 1917 | July | 22, 1917  |      |           |      |          |
| United States..... | April | 6, 1917  | Dec. | 7, 1917   |      |           |      |          |
| Uruguay.....       | †Oct. | 7, 1917  |      |           |      |           |      |          |

\* War declared by a Central Power (named at top of column). In all other cases declaration was first made by an Entente Power.

## The World's Greatest Canals

|                                  | Year<br>opened | Miles<br>long | Feet<br>deep | Feet              |    | Estimated Cost              |
|----------------------------------|----------------|---------------|--------------|-------------------|----|-----------------------------|
|                                  |                |               |              | Wide at<br>Bottom |    |                             |
| Berlin-Stettin (Hohenzollern) .. | ....           | 136           | 9.8          | 32-39             | \$ | 12,500,000                  |
| Kronstadt (Russia) .....         | 1890           | 16            | 20.50        | 220               |    | 10,000,000                  |
| Elbe and Trave (Germany)....     | 1900           | 41            | 10           | 72                |    | 5,831,000                   |
| Kiel (Germany) .....             | 1895           | 61            | 45           | 150               |    | 94,818,000                  |
| Manchester (England) .....       | 1894           | 35.5          | 26           | 120               |    | 75,000,000 to \$ 85,000,000 |
| Marseilles (River Rhine).....    | ....           | 60            | ....         | 82                |    | 20,000,000                  |
| Panama (U. S.).....              | 1914           | 50.5          | 45           | 300               |    | 375,000,000                 |
| Sault Ste. Marie (U. S.).....    | 1855           | 1.6           | 22           | 100               |    | 10,000,000                  |
| Sault Ste. Marie (Canada) .....  | 1895           | 1.11          | 20.25        | 142               |    | 2,791,873                   |
| Suez (Egypt) .....               | 1869           | 90            | 31           | 108               |    | 100,000,000 to 127,000,000  |
| Welland (Canada) .....           | 1887           | 26.75         | 14           | 100               |    | 25,000,000                  |

### **U. S. Generals and Lieutenant-Generals**

There have been only seven full generals in the history of the United States Army, and three of them reached their rank in the World War—Generals John J. Pershing, Tasker H. Bliss and Peyton C. March. The others in the order of their elevation were: George Washington, Ulysses S. Grant, William T. Sherman and Philip H. Sheridan.

There have been twelve men enjoying the rank of lieutenant-general in this country: George Washington, Ulysses S. Grant, Wm. T. Sherman, Philip H. Sheridan, John M. Schofield, Nelson H. Miles, Samuel B. M. Young, Adna R. Chaffee, John C. Bates, Henry C. Corbin, Hunter Liggett and Robert L. Bullard.

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### **American Forces Larger Than British**

When the armistice was signed the American army on the western front was numerically superior to that of Great Britain. According to Gen. Peyton C. March's official figures, on Nov. 1, 1918, France had a total of 2,559,000 in the field, the United States had 1,950,100 in France, and the British and Portuguese forces combined totaled 1,718,000. These figures refer to "ration strength" and include all soldiers who have to be fed, combatants, medical and supply departments, etc.

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### **"Rifle Strength" in the World War**

Figures compiled by the Intelligence Division of the General Staff of the U. S. Army in France, on the "rifle strength" of the Allies and America, as compared with the Central Powers, clearly explain the German collapse. By "rifle strength" is meant the "number of men standing in the trench ready to go over with bayonet," excluding all non-combatant troops, those in reserve, etc. In the spring of 1918 Germany had 1,500,00 men so classified, against an allied total of 1,250,000. On June 1, 1918, the Germans attained their peak, with 1,639,000 rifles,

the allied strength being 1,496,000. July 1, Germany had 1,412,000 to 1,556,000, the Allies being numerically superior for the first time in the whole war. Sept. 1st the Allies reached their zenith with 1,682,000 against Germany's 1,339,000. On Nov. 1 the allied rifles numbered only 1,485,000 but Germany had only 866,000; 733,000 German effectives, or over 47 per cent, of their maximum 1918 strength, had melted away between June 1 to Nov. 1! These figures seem surprisingly small, but it must be remembered that they comprise roughly only about one-fifth of the total number of men in the respective armies.

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### **America's Peak of War Strength**

The total strength of the United States Army on Nov. 11, 1918, when the armistice was signed and when the American war effort was at its peak, was 3,703,273 officers and men, including the Marine Corps on duty with the army in Europe.

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### **U-Boats Lost**

Soon after the signing of the armistice it was announced that from 150 to 200 German submarines had been destroyed out of a total of 360 built.

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### **Meaning of "Bolsheviki"**

Primarily, the use of the term Bolshevik (from the Russian "bolsha," meaning "majority"), was to indicate the majority faction of the Socialist party after the splitting of that party in 1905. The close of the Russo-Japanese war found Russia in the throes of civil strife. On Oct. 30, 1905, the decree established what has since been known as the fundamental law, and it was difference in opinion respecting the advantages accruing to the duma through this law that brought into existence the two diametrically opposite parties now known as the Bolsheviks and the Mensheviks.

The Mensheviks were the conservative Socialists who believed that reform could be

brought about only through co-operation of all parties in the state and who looked upon violence of any sort as a method of attaining reform with disfavor. The Bolsheviki are the radical Socialists who favored violence, bombing, sabotage, and terrorism as the means to their end.

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### **Country Boys Physically Inferior to City Boys**

The report of the U. S. Surgeon General for 1917, and the reports of the examining surgeons, show, strange to say, that the country boy was proved physically inferior to the city boy under the acid tests of the selective draft. In two groups, each with nearly 50,000 members, chosen in such a way that immigration, climate, etc., had as little to do with the result as possible, the percentage of rejections for physical disabilities was 28.47 per cent. among country boys and only 27.96 per cent. among city boys. And the country boy who passed the draft tests, got into the army and underwent training was not equal as a soldier to the city boy. The highest sickness and death rates were found among southern country boys.

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### **War Risk Insurance**

Soon after the signing of the armistice it was announced that the Bureau of War Risk Insurance at Washington had written over \$38,000,000,000 of insurance for men in the U. S. service, and had received more than 4,000,000 allotment and allowance applications. Almost 40,000,000 separate card records were then on file.

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### **War Garden Crops**

According to the National War Garden Commission, war gardeners in the United States planted 5,285,000 gardens in 1918, in back yards or vacant lots, and raised crops valued at \$525,000,000. In 1917, 3,500,000 gardens were planted with a crop value of \$350,000,000.



**Y. M. C. A. in the World War**

May 1, 1917, to Dec. 31, 1918.

(Statement Furnished by National War Work Council)

Huts, tents and buildings of various design operated in United States, 1,000; in war zone, 1,900.

Workers employed in war zone, 8,500, including 1,500 women—4,000 in American camps.

Contributed by public to support work: April, 1917, \$5,000,000; October, 1917, \$53,000,000; November, 1918, the "Y" received 58.65 per cent of the \$203,000,000 raised in United War Work campaign.

Expenditures, approximately \$80,000,000.

Attendance at buildings maintained in United States camps (estimated), 302,493,000.

Envelopes used in United States camps, 242,-249,049.

Entertainments, including motion picture exhibitions, 143,666, attended by (estimated) 73,-000,000.

Hundreds of tons of supplies were shipped from this country for the boys over there. In one month—December, 1918—900,000 packages of biscuits, 1,650,000 pounds of chocolate, 90,000 cakes of soap, three million cigars, seventy million cigarettes and 50,000 pounds of cocoa to be sold at Quartermaster's prices were provided in the "Y" canteens.

Fighting men overseas sent home more than \$3,000,000 each month through the "Y" banking and postoffice department.

At the end of 1917 there were less than 1,500 "Y" men and women overseas. On Jan. 1, 1919, it is estimated that there were 6,048 men and 1,395 women in "Y" uniform overseas. Nine workers, two of them women, had been killed by shell fire while on duty; twenty-three were wounded or gassed severely; many others had received minor injuries, and thirty-one had died in the service, chiefly from exposure and overwork. Ten had been decorated for bravery.

### Great Sayings of the World War

The World War produced many dramatic phrases, epigrams, etc. Among them are: "They shall not pass." This immortal saying grew out of the plight of hard-pressed Verdun and has been variously attributed to Marshal Joffre, Marshal Petain, and to the men in the ranks, who at any rate adopted it and made it good. The Germans did not pass. "Lafayette, we are here," General Pershing's simple utterance when he placed a wreath on the tomb of the great French friend of America, will live in history after the sonorous phrases of oratory are forgotten. A passage that has greatly stirred all patriotic Americans is that attributed to both Maj. Gen. Robert L. Bullard and Maj. Gen. Omar Bundy. The story goes that the Americans, who were serving under a French commander, were ordered to retreat at Chateau Thierry, whereupon the American general sent this vibrant reply: "*The American flag has been compelled to retire. This is unendurable. We are going to counter-attack.*" By many this is regarded as the turning point of the greatest war in history. At any rate, the Americans did advance against overwhelming odds, the victory of Chateau Thierry followed, and from that day to the armistice the Germans were constantly on the defensive. When Vice Admiral Sims, in command of the American naval forces in European waters, was asked upon the arrival of the first U. S. destroyers in England, in May, 1917, "When will you be ready for business?" he astounded the English naval officers by answering promptly, "*We can start at once. We made our preparations on the way over.*" Gen. Pershing's offer of the American forces to Gen. Foch to be brigaded with the allies under stress of the menacing German advance is not likely to be forgotten: "*Infantry, artillery, aviation, all that we have are yours. Dispose of them as you will.*" "*Go to hell!*" is not to be recommended in certain respects, but who has not thrilled

when he read how Maj. Charles Whittlesey, the young New York lawyer with the glasses, who commanded the famous "lost battalion" in the Argonne Forest, made that spirited retort when the Germans who all but surrounded him and his mere handful of men called upon him to surrender. Marshal Joffre is quoted as thus exhorting his soldiers at the Marne: *"The hour has come to advance at all costs; to die where you stand rather than to give way."* Foch's great message to Joffre in the early days of the war, also the first battle of the Marne, deserves to rank with the supreme utterances of history: *"My right is crushed; my left is in retreat. I am attacking with my center."* Gen. Gallieni's rallying cry to the people of Paris, of which he was military governor when the first German rush threatened to inundate the capital, deserves preservation. It was, *"To the very end."* Field Marshal Sir Douglas Haig, on April 13, 1918, called on his men for a supreme effort, after the English had been driven back steadily for three weeks. *"Every position must be held to the last man,"* he ordered. *"There must be no retirement. With our backs to the wall and believing in the justice of our cause, every one of us must fight to the end."* Premier Venizelos, of Greece, in refusing the cynical invitation of the German ambassador to side with the Central Powers in return for Monastir and a part of Serbia, returned an answer that has the right ring. *"You ask me to dishonor my signature,"* he said, *"to dishonor my country, and to violate its obligations toward Serbia, and, as remuneration, you offer me a part of the corpse of that which I am expected to kill. My country, sir, is too little to commit so great an infamy."*

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### Area of American Cities

In 1915 the area in acres of certain American cities was as follows: New York, 183,555; Los Angeles, 183,464; New Orleans, 125,440; Chicago, 121,502; Philadelphia, 83,340.

### **German Atrocities**

The first months of the World War witnessed the inauguration by Germany of a policy of terror in the invaded districts of Belgium and France, evidently premeditated and designed to facilitate the control of conquered territory, the U. S. official "War Cyclopedia" informs us. Villages and towns were burned, wounded soldiers massacred, non-combatants shot or maimed, women outraged and children tortured by the soldiery. Allegations of similar practices on the part of the Russians in East Prussia were made by the Germans. The truth of the stories told of German atrocities in France was attested by a French official report, issued in the spring of 1915. On May 12, 1915, a British commission headed by Lord Bryce published a report on Belgian atrocities, which convinced those hitherto incredulous that the stories of German cruelty were correct. Studies made by Prof. Reiss, of the University of Lausanne, in October and November, 1914, and issued in a later report, show that the Austrian armies in Serbia were guilty of the same atrocities which characterized German behavior in Belgium. Another Bryce report gives accurate details of the massacres of Armenians at the hands of the Turks, until July, 1916.

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### **Army War College**

A school in Washington to which selected officers (captain and above) are sent to study the higher problems of war, and to work upon detailed plans of national defense. It was first organized in 1901, after the Spanish War, and our present military system is largely based upon its leadership.

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### **Army Service Schools**

At Fort Leavenworth, Kans., a group of advanced schools is maintained for the instruction of selected officers in the problems of line, staff, signal, engineer, field and medical service.



### Armenian Massacres

The name given to the organized attempts made by the Turks on at least three occasions to extirpate Armenians living in Asia Minor. The first series of massacres occurred in 1895-96, and appears to have had the aid of the Turkish Government. Again in 1909 outbreaks occurred at Adana, in Syria, and its vicinity, having at least the connivance of the Turkish Government. The third, and probably the worst, outbreak occurred in 1915, after Turkey entered the war as Germany's ally. Thousands of the Armenian population of Asia Minor were either killed on the spot or else deported into the most inhospitable spots in the Ottoman Empire, there to die of starvation, exposure, and exhaustion. The total number of those who have lost their lives is not exactly known, but is large enough to brand such procedure as one of the most shamelessly brutal race massacres of all time. That religious differences or economic disturbances—the Armenians are the small capitalists of Asia Minor—are not responsible is proved by the fact that in normal times Armenian and Turk work together without grave friction. It would appear that the desire to eliminate an alien race and to destroy any possible allies for a Russian advance in Asia Minor were at the bottom of the affair; that it was the Government and not the average Turk who is responsible. Germany could have stopped the massacres by a word, but she did not.

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### Camouflage

The French word for a military art that assumed new importance in the World War as a result of the effort to conceal fortifications, ships, guns, trenches, etc., from the observation of hostile aircraft. It consists in painting objects of war so that they may blend readily into the landscape and thus be lost to view or in concealing them by screens or false work, or even in "faking" fortifications or "Quaker" guns.

### U. S. Naval Strength

Secretary of the Navy Daniels, on Jan. 1, 1919, gave a tabulation of the strength of the navies of six of the big world powers, including Germany before the surrender. The table showed the United States ranking third, with Great Britain and Germany ranking first and second. Germany's surrender, of course, put the United States second in naval strength. The figures for the two leading naval powers follow:

#### GREAT BRITAIN.

|                               |     |
|-------------------------------|-----|
| Battleships .....             | 61  |
| Battle cruisers .....         | 9   |
| Battle cruisers building..... | 4   |
| Cruisers .....                | 31  |
| Light cruisers .....          | 89  |
| Light cruisers building.....  | 22  |
| Destroyers .....              | 409 |
| Destroyers building .....     | 102 |
| Submarines .....              | 140 |
| Submarines building .....     | 78  |
| Airships .....                | 220 |

#### UNITED STATES.

|                                               |     |
|-----------------------------------------------|-----|
| Battleships .....                             | 16  |
| Battleships, building or authorized.....      | 13  |
| Older type battleships.....                   | 23  |
| Battle cruisers, building and authorized..... | 6   |
| Armored cruisers .....                        | 8   |
| Cruisers, first class.....                    | 4   |
| Cruisers, second class.....                   | 4   |
| Cruisers, third class.....                    | 15  |
| Destroyers .....                              | 92  |
| Destroyers, building or authorized.....       | 250 |
| Submarines .....                              | 79  |
| Submarines, building or authorized.....       | 102 |

### U. S. National Bank Resources

Resources of the National Banks of the country on Nov. 1, 1918, aggregated \$19,821,404,000, exceeding the combined aggregate resources of the National Banks of Issue of England, the Dominion of Canada, France, Italy, the Netherlands, Norway, Sweden, Denmark, Japan and Germany.

### **Traditions of the Sailor's Uniform**

Many old customs and traditions have left their trace on the uniform of American sailors of the present day, according to The Fleet Review. The wide, flaring trousers suggest a waste of material when seen on a city street, but they are really the most practical shape for duty on shipboard. Because of the looseness they may be rolled up snugly to the knees when the sailor is holystoning the decks, and the flare also prevents them from binding at the knee when the bluejacket is required to go aloft. Another important advantage of the looseness is that, combined with the arrangement of the buttons on the side, the trousers may be easily slipped off in the water. The thirteen buttons across the top of the trousers are supposed to represent the original thirteen States. The black tie, prescribed by regulation for American bluejackets, was handed down from the British Navy. It was worn by the sailors of this fleet in memory of Nelson after the death of the great naval hero. Similarly, the three white stripes bordering the collar commemorate three great victories won by Nelson. The bit of white undershirt showing at the neck is associated with the famous American admiral, Farragut. After his death the sail in which his body was lowered to the water was divided among his sailors, with the request that the pieces be worn across their chests. This established the custom of wearing a white dicky, which is now replaced by the portion of the undershirt.

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### **The Central Powers**

The name commonly applied to the group of countries fighting in alliance with Germany in the World War, and including Germany, Austria-Hungary, Bulgaria, and Turkey. They controlled and dominated central Europe from the North Sea to Constantinople, and their influence penetrated Asia to the edge of Mesopotamia. They aimed to control also the shores of the Persian Gulf.

### Cantonments

Camps, usually with wooden buildings, constructed for the use of the National Guard and the National Army while their various units were being prepared for service abroad in the World War. Most of them were in the South, where the winter climate is mild enough to permit some of the men to live under canvas. In the North, barracks and other buildings were constructed with such amazing speed that though begun only in June, 1917, they were being occupied in September. Suitable sites first were secured, the ground was leveled, water supply and drainage systems were installed, roads and railways were built, lavatories, baths, kitchens, bakeries, refrigerating plants, laundries, hospitals, mess and lodging halls have been made ready by thousands upon thousands of engineers and mechanics gathered together in the neighborhood of the camps. Each cantonment became a city complete within itself. That in Maryland, Camp Meade, was properly called "the second largest city" in the State. The cantonments were located, according to the official U. S. "War Cyclopedia," at the following places:

| Place.                        | Name.                    | Designation. |
|-------------------------------|--------------------------|--------------|
| Alexandria, La. . . . .       | Camp Beauregard. . . . . | Natl. Guard  |
| American Lake, Wash.          | Camp Lewis. . . . .      | Natl. Army   |
| Annapolis Jct., Md. . . . .   | Camp Meade. . . . .      | Do           |
| Anniston, Ala. . . . .        | Camp McClellan. . . . .  | Natl. Guard  |
| Atlanta, Ga. . . . .          | Camp Gordon. . . . .     | Natl. Army   |
| Augusta, Ga. . . . .          | Camp Hancock. . . . .    | Natl. Guard  |
| Ayer, Mass. . . . .           | Camp Devens. . . . .     | Natl. Army   |
| Battle Creek, Mich. . . . .   | Camp Custer. . . . .     | Do           |
| Charlotte, N. C. . . . .      | Camp Greene. . . . .     | Natl. Guard  |
| Chillicothe, Ohio. . . . .    | Camp Sherman. . . . .    | Natl. Army   |
| Columbia, S. C. . . . .       | Camp Jackson. . . . .    | Do           |
| Deming, N. Mex. . . . .       | Camp Cody. . . . .       | Natl. Guard  |
| Des Moines, Iowa. . . . .     | Camp Dodge. . . . .      | Natl. Army   |
| Fort Riley, Kans. . . . .     | Camp Funston. . . . .    | Do           |
| Fort Sill, Okla. . . . .      | Camp Doniphan. . . . .   | Natl. Guard  |
| Fort Worth, Tex. . . . .      | Camp Bowie. . . . .      | Do           |
| Greenville, S. C. . . . .     | Camp Sevier. . . . .     | Do           |
| Hattiesburg, Miss. . . . .    | Camp Shelby. . . . .     | Do           |
| Houston, Tex. . . . .         | Camp Logan. . . . .      | Do           |
| Linda Vista, Cal. . . . .     | Camp Kearny. . . . .     | Do           |
| Little Rock, Ark. . . . .     | Camp Pike. . . . .       | Natl. Army   |
| Louisville, Ky. . . . .       | Camp Zachary Taylor      | Do           |
| Macon, Ga. . . . .            | Camp Wheeler. . . . .    | Do           |
| Mineola, L. I., N. Y. . . . . | *Camp Mills. . . . .     | Natl. Guard  |



|                       |                    |             |
|-----------------------|--------------------|-------------|
| Montgomery, Ala....   | Camp Sheridan..... | Natl. Guard |
| Palo Alto, Cal.....   | Camp Fremont.....  | Do          |
| Petersburg, Va.....   | Camp Lee.....      | Natl. Army  |
| Rockford, Ill.....    | Camp Grant.....    | Do          |
| San Antonio, Tex....  | Camp Travis.....   | Do          |
| Spartanburg, S. C.... | Camp Wadsworth.... | Natl. Guard |
| Waco, Tex.....        | Camp MacArthur.... | Do          |
| Wrightstown, N. J.... | Camp Dix.....      | Natl. Army  |
| Yaphank, L. I., N. Y. | Camp Upton.....    | Do          |

\*Abandoned for winter use, December, 1917.

### Execution of Edith Cavell

The execution of Miss Edith Cavell, which so stirred the civilized world, occurred at 2 a. m. of October 13, 1915, in pursuance of sentence passed by the German military court at Brussels, the charge against her being that she had assisted English and Belgian young men, who had come under her care as nurse, to cross the frontier into Holland. We quote from the official U. S. "War Cyclopedia": Miss Cavell had spent her whole life in alleviating the sufferings of others; the death penalty had not before this been inflicted for the offense with which she was charged. In view of both of these facts, Mr. Whitlock, American minister to Belgium, and his first secretary, Mr. Hugh Gibson, did all that they could from the beginning to prevent the horror of her execution. Baron von der Lancken was at this time civil governor of Belgium, and it was to him that the Americans addressed their pleas. At 8:30 of the evening preceding the execution, Gibson learned that Miss Cavell was to be shot during the night. Though he could scarcely credit the report in view of von der Lancken's repeated assurances that he should be kept informed of all developments, he at once set out with the Spanish minister for the governor's headquarters. "I briefly explained the situation as we understood it and presented the note from the minister transmitting the appeal for clemency," Gibson wrote in his diary. "Lancken read the note aloud in our presence, showing no feeling aside from cynical annoyance at something, probably our having discovered the intentions of the German

authorities." At first von der Lancken denied that the sentence was to be carried out in the course of the night. Then he admitted it. They reminded him of the burning of Louvain and the sinking of the *Lusitania* and told him that "this murder will rank with those two affairs and stir all civilized countries with horror and disgust," whereupon Count Harrach, a member of the governor's staff, interrupted with the remark that his only regret was that they did not have "three or four old English women to shoot." Gibson asked von der Lancken to telephone the Kaiser, but the request was refused. Then he recounted the many services which the American legation had rendered the Germans, but all without avail. "We did not stop," Gibson continues, "until midnight, when it was only too clear that there was no hope." He concludes: "The day brought forth another loathsome fact in connection with the case. It seems the sentence on Miss Cavell was not pronounced in open court. Her executioners, apparently in the hope of concealing their intentions from us, went into her cell and there, behind locked doors, pronounced sentence upon her."

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### U. S. Munitions Output

Figures made public by the Ordnance Department of the Interallied Bureau of Statistics show that the production of munitions in this country had grown so rapidly that in the last months of the World War the United States was far ahead of Great Britain and France. Average monthly production of machine guns and machine rifles for July, August and September, 1918, in the United States was 27,270 against 10,947 for Great Britain and 12,126 for France. In the same period the United States produced monthly an average of 233,562 rifles, against 112,821 for Great Britain and 40,522 for France. With respect to small arms ammunition production in the United States was 277,984,000 rounds; Great Britain 259,769,000.

### **Barrage**

A new word in the military vocabulary—specifically, the act of barring by artillery fire. By exact measurements a line of guns is brought to bear upon a certain terrain. The fire creates a complete screen of projectiles. Behind it a body of troops is safe; through it no enemy can advance. By moving the barrage line forward ("creeping" barrage) a detachment can advance with a minimum of casualties. It is controlled by observers at the front who find ranges and direct artillery fire by telephone or wireless, and it demolishes, in front of the attacking force, wire entanglements, trenches, and "pill-boxes."

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### **British Navy**

The British Navy has for more than a century been the largest and most powerful in the world, its size made necessary by the island position of Britain, and the scattered dominions of the British Empire. Its modern development dates from the naval defense act of 1889, which adopted the principle that the British Navy must be as strong as the fleets of the next two naval powers together. Under the pressure of German competition, this standard had to be abandoned after 1909. Nevertheless, at the opening of the war, the British fleet comprised 46 battleships, built and building, of the dreadnaught class, 40 older battleships, 125 cruisers, 237 torpedo craft, and 99 submarines. Large additions have been made since 1914, and despite losses, the fleet remains the most powerful fighting force afloat.

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### **Meaning of "Boche"**

The term commonly used by the French soldiers to designate the Germans. The origin of the term as used in this way is disputed. It was used before the war as the equivalent of German. It was so used by the Paris printers to designate their German assistants. It was prob-

ably used also in the Franco-Prussian War in 1870, for Zola, in his novel *La Debacle*, a story dealing with the war, puts the term in the mouths of the French soldiers to designate the Germans. The term *ce boche* was used, before the Franco-Prussian war at least, as equivalent to "that chump," and *tête de boche* is given by French dictionaries of slang as equivalent to "wooden-pate" or "blockhead." It is perhaps for this reason that some French scholars derive the present use of *boche* from *caboche*, a French word meaning head.

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### Who Were the Allies?

France, Russia, and Great Britain, bound together not by formal alliance but by informal understanding, or entente, received the name Allies or Entente Allies early in the war, and the term Allies has continued in use since then, according to the U. S. "War Cyclopedia." In its popular use, however, the word embraces all the enemies of the Central Powers. More narrowly it includes only the signers of the pact of London, September 5, 1917, in which the Allies pledged themselves against making a separate peace. Italy and Japan later joined this alliance. The United States made no alliance with any of its associates and is not bound by any agreements.

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### Anzac

A composite word used to designate the British colonial troops engaged in the Gallipoli campaign. It is made by taking the initial letters of the Australia-New Zealand Army Corps.

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### The Highest Single Fountain Jet in the World

The highest single fountain jet in the world is on the estate of 200 acres given by the late Trenor W. Park as a Home for Destitute Children and Women, at Bennington, Vt. This jet rises to the height of 198 feet.



### Effect of War on Building Operations

The effect of the World War upon building operations in the United States is shown by the following official figures: In 60 selected cities 199,738 permits were issued or buildings erected in 1917, a decrease of 70,044, as compared with 1916 before we entered the war. The cost of these operations was \$584,193,378 in 1917, as against \$899,684,512 in 1916, a decrease of \$315,-491,134, or 35 per cent. For 1917 a total of 145 cities reported operations costing \$687,415,605. For 1916 practically the same cities reported operations costing \$1,024,211,675.

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### First President of German Republic

On February 11, 1919, three months to a day after the signing of the armistice ended the Great War, Friedrich Ebert, Socialist leader and former saddler, who had been head of the provisional government, was duly elected first president of the new German republic, the delegates of the national assembly at Weimar voting 277 to 102 in his favor.

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### "Deutschland"

An unarmed German merchant submarine, the first of its kind, about 300 feet long, and carrying a cargo of about 800 tons. In 1916 it twice sailed from Germany to the United States and returned. Each crossing of the Atlantic took from 16 to 22 days. The German cargo was reported to consist chiefly of dye-stuffs; the American cargo of rubber and nickel. For several months German sympathizers built high hopes on the *Deutschland*, believing that it would prove to be only the first of a large number of German submarine freight boats and that the Allied blockade of Germany would thereby be broken. But no other such vessel ever reached an American port, although the sailing of a companion vessel, the *Bremen*, was reported.

### **“Deutschland Ueber Alles”**

The refrain of a popular German song that has acquired a new and sinister meaning since 1914. If it meant only the supreme love of the loyal German for his fatherland it would embody a virtue; its vice and menace lay in the belief among many Germans that their Germany was to dominate the world.

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### **Disarmament**

The idea of disarmament is not new; a hundred years ago, at the Congress of Vienna, men hoped that the nations would lay down their arms and live in peace. There was no formal action at the time, but in practice all European governments greatly reduced their military establishments. After the wars, however, of Italian and German unification (1859-1871) conscription was generally adopted in Europe, only to be found a burden and a danger. Accordingly in 1898 the Czar of Russia invited the nations represented at his capital to a conference for the discussion of disarmament. The conference met at The Hague in 1899, but, although much was done to promote the cause of peace, disarmament was ruled out by the resolute opposition of Germany, whose delegates boasted that armaments were not a burden but a privilege, and that Germany could increase her expenditures indefinitely. The conference therefore could only resolve that “the restriction of military charges . . . is extremely desirable.” As the time for the second conference drew near the German Emperor declared to Edward VII, of England, that he would go to war rather than allow the question of disarmament to be discussed. At this conference in 1907, however, it was resolved that “the governments should resume the serious examination of this question.” In the years immediately preceding the World War Great Britain endeavored to effect by agreement with Germany some limitation of naval programs, but without success.

### U. S. Constitution

The Constitution of the United States consisted, in its original form, of 7 articles, to which have since been added 19 articles of amendment. The first 3 articles deal, respectively, with the powers and organization of Congress, the presidency, and the national judiciary. Article V prescribes the various methods by which the Constitution may be amended. Article VI states the important principle of the supremacy of the National Government within its field over conflicting State powers. Of the amendments the first 10 are restrictive of the National Government, while the 14th imposes important limitations on State power. Of the four recently adopted amendments, the 16th authorizes an income tax, the 17th provides for the popular election of Senators; the 18th, national prohibition; 19th, woman suffrage. In contrast to the British constitution, ours is written and not amendable by ordinary legislative processes.

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### The Dardanelles

The straits which separate the Gallipoli Peninsula from Asia Minor and which form the western approach by water to Constantinople. In parts they are extremely narrow, and because of strong fortifications are almost impassable for an attacking fleet. In February and March, 1915, a Franco-British squadron carried on a bombardment and, after silencing the forts at the mouth of the straits, proceeded up to the narrows. In April an expeditionary force of British and French troops was landed on the shores of the Gallipoli Peninsula. The Turks, warned of their danger, had made good use of the terrain, which was exceedingly well fitted for purposes of defense. Behind good fortifications the Turk is an excellent fighter and the advance of the expeditionary force was checked decisively. Its losses were heavy, and in January, 1916, the attack on the Dardanelles was abandoned.

### "Der Tag"

For many years the favorite toast in the German Army and Navy was *Der Tag*—the day when their war for world conquest would come. Not long after the Spanish War, according to the U. S. "War Cyclopedia," quoting the testimony of Maj. N. A. Bailey to Dr. W. T. Hornaday, in a letter from Dr. Hornaday in New York *Tribune*, Aug 11. 1915, a German diplomat, von Goetzen, told an American Army officer: "About 15 years from now *my country will start her great war. She will be in Paris in about two months after the commencement of hostilities. Her move on Paris will be but a step to her real object—the crushing of England. Everything will move like clockwork. We will be prepared and others will not be prepared. I speak of this because of the connection which it will have with your own country. Some months after we finish our work in Europe we will take New York, and probably Washington, and hold them for some time. We will put your country in its place with reference to Germany. We do not propose to take any of your territory, but we do intend to take a billion or more dollars from New York and other places.*"

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### Military Draft

A military draft is based upon the universal liability to service of all male citizens and permanent residents. The principle is as old and as universal as government. The French Revolution revived and systematized universal liability to service, which became the foundation of military power on the continent of Europe in the nineteenth century, the liability being extended from service in a national emergency to service in time of peace, on the theory that if one is liable to serve one is also bound to receive the training necessary for useful service. In the United States Washington desired the draft in the Revolution, and Madison was intending to employ it in 1815, when the close of



war rendered it unnecessary. In the Civil War it was resorted to by both Union and Confederate governments. Lincoln first applied it in 1862, at that time calling upon the governors, without special legislation, to use their constitutional power to draft within the several States. In 1863 Congress provided for a national draft, which was applied throughout the war. The draft has taken many forms. The ages between which there is liability to service are traditionally 16 to 60. In a modern state all persons between the stipulated age could not be employed, and so from the total a certain number is drafted. All systems attempt to equalize the burden between the various communities by calling for the same proportion or quota from each. Should this number be chosen by lot, we would have a simple draft system. In all cases, however, the attempt is made to draw first the most fit or those who can best be spared. Any such system is a selective draft. Any draft is a conscription, though in common usage conscription is usually applied to an elaborate and generally to a permanent system, as contrasted with use for an emergency only.

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### German Colonies

Germany's colonial possessions, before she was shorn of them by the war, had an area of more than 1,000,000 square miles. In Africa she had the Kamerun in West Africa, with an area of 191,000 square miles and a population of 4,500,000, German East Africa of above 400,000 square miles and a population of 6,850,000, and German Southwest Africa of 320,000 square miles and a population of 200,000. Her colonial policy everywhere was expensive to her and unsuccessful. It was repressive and cruel. Her civil and military officials in charge of the destinies of her colonists were martinets, the natural product of her militarist system of government at home. Even German emigrants preferred to settle in the British colonies.

### Entente

A French word of which a literal translation is "understanding," used of international arrangements less binding than formal alliances.

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### The Foreign Legion

A well-known name in the military history of France. The French Army which established Maximilian on a throne in Mexico had its foreign legion. The legion has seen much service in Morocco, and some of its peculiar methods are the result of this. In the World War it was a body of men drawn from every quarter of the globe, who, in love of military glory and with sympathy for the ideals which the Allies were holding before them, volunteered their services to France. These "soldiers of fortune," from our mountains and plains, from the Canadian northwest, from the Australian bush, from Africa, the South American states, and every corner of Europe, performed the most daring feats on the battle front, in Flanders and France. Their deeds and achievements will form material for song and story for generations to come.

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### "Four Minute" Men

A nation-wide organization of volunteer speakers who made brief addresses in motion-picture theaters under Government authority. In November, 1917, there were over 15,000 speaking on subjects assigned week by week.

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### Freedom of the Seas

The doctrine of "freedom of the seas" was first propounded by Grotius in his *Mare Liberum*, which took for its text the sentence from the Roman Institutes, "The air, running water, the sea—are common to all." Selden answered with his *Mare Clausum*, which defended the pretensions of England over the waters surrounding the British Isles. The issue between Grotius and Selden may be regarded as settled by the

present doctrine regarding the marine league, i. e., that the jurisdiction of a state extends three miles beyond the coast line, *and no farther*. The next stage in the development of this concept took place in the eighteenth century, when continental antagonism to British sea power produced the doctrine that "free ships make free goods." This doctrine was backed by the armed neutralities of 1780 and 1800, and was finally incorporated, in great part, into international law by the Declaration of Paris, 1856, which also abolished privateering. Meantime a third meaning had come to be fastened to "freedom of the seas," the idea that private property should be immune from capture on the high seas in war time unless it was contraband or intended for a blockaded port. Of this notion the United States has always been the peculiar champion, the last time being at the second Hague conference, where our views were backed by Austria-Hungary, Germany, and Italy.

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### The I. W. W.

The Industrial Workers of the World, or I. W. W., a radical labor organization formed in 1904, has its headquarters in Chicago. There were 15,000 members in 1915, mainly in the West. Its platform denounces the trade-unions for pitting one set of workers against another, and calls for the union of all workers into one common organization and the abolition of capitalism and of the wage system. Its weapons are the strike, arson, and sabotage, which last term involves the impairment of industry through destruction of machinery, "mistakes," slackening the pace of workers, etc. Its representatives have conducted bitter strikes in Lawrence, Mass.; Paterson, N. J., and in various places in the West. On September 5, 1917, its headquarters and various branches were raided by the Government and many documents seized as evidence of a conspiracy to lessen the output of supplies needed for the war.

### "Frightfulness"

The name given to the German method of warfare whereby they made war terrible in the hope of winning victory through fear. The German word is *Schrecklichkeit*. As applied by the German military caste it does not mean the occasional and incidental horrors attached to warfare, but deliberate, systematic, and calculated terror conceived and ordered for the purpose of striking mortal fear into the hearts of foemen. It seems to have been first applied to the Germans in Belgium in the early days of the war when the German army lay between the French and English on the south and the Belgian forces on the north with a hostile population intermingled. Out of all the confused and contradictory stories of those days has come the clear proof that the German military authorities, unwilling to face like men the dangers of the situation they had themselves created, with studied design shot and hanged hundreds of Belgians, those innocent of all offense as well as those who had threatened or injured German soldiers. Towns were leveled to the ground, wide districts were laid waste.

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### "Hun"

A term of reproach leveled at the Germans by their enemies in the Great War. It seems to have been first associated by William II with his army as a term of praise. When he addressed his troops about to sail for China, at Bremerhaven, July 27, 1900, he was reported by the local daily, the *Norddeutsche Zeitung*, as saying: "When you come upon the enemy . . . no quarter will be given. . . . No prisoners will be taken. . . . As the Huns under their King, Attila, a thousand years ago, made a name for themselves which is still mighty in tradition and story, so may the name of German in China be kept alive through you in such wise that no Chinese will ever again attempt even to look askance at a German."



### Use of Gas in War

During the engagement near Ypres, April 22, 1915, the German army introduced poisonous or asphyxiating gases, a "method of warfare up to now never employed by nations sufficiently civilized to consider themselves bound by international agreements." These gases were generated in bombs, grenades, and other apparatus, and allowed to drift with suitable winds into the allied trenches. A week earlier, says Gen. French, the Germans had falsely announced that the British were using asphyxiating gases as a weapon of war. Later, the use of gas in explosive shells became general, the Allies having been forced in self-defense to adopt it.

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### Income Tax

An internal revenue tax levied upon net incomes of persons or corporations. This form of tax was used during the Civil War, but was declared unconstitutional by the Supreme Court in 1894. A corporation income tax was included in the Payne-Aldrich tariff of 1909, and an amendment to the Constitution authorizing a tax on private incomes was ratified in 1913. In 1913 a tax on private incomes was passed by Congress, and this was subsequently increased as a war measure. The highest rate on large incomes levied by any European country during the war was the English, with a maximum rate of 43 per cent, as compared with 50 per cent, the maximum rate in the United States.

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### Junker

A member of a noble Prussian family, who belongs to the landed aristocracy, and, as a rule, adopts the profession of arms and enters the caste circle of the officer corps. Thanks to the survival of feudalism in the organization of German society, the term has acquired a broader significance. Hence as used commonly today it indicates a narrow-minded, arrogant, and, often, bellicose member of the aristocracy.

### **The Battle of Jutland**

The most important naval battle of the World War, fought May 31, 1916, between the German high seas fleet, under Admirals Hipper and Scheer, and the British grand fleet, under Admirals Jellicoe and Beatty. Much of the engagement was fought in the mist and after dark, while the opposing statements of losses leave their exact extent in doubt. The Germans prematurely celebrated a victory with a school holiday, but their fleet retired to port and did not again venture out to challenge the British fleet.

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### **“Kultur”**

Kultur indicates the whole mass of customs, conventions, usages, laws, institutions, and languages from which the Prussian people derives its outlook, and in which it expresses the dominant characteristic differences distinguishing it from other peoples. A *Kulturmensch* (culture-man) is not primarily a distinctive individual but the exponent of self-conscious national tendencies. Accordingly, Kultur has come to indicate (since about 1880) the type of civilization for which the German Empire long stood sponsor, thanks mainly to the leadership of Prussia.

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### **The Lafayette Escadrille**

A body of young American aviators who, in memory of Lafayette's services to the United States during our War for Independence, volunteered to aid France. Before we had yet declared hostilities upon Germany it was stated that they had brought down 30 enemy aircraft. They were the first to raise the Stars and Stripes on the western front in April, 1917, upon receiving news of our entry into the war.

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### **Naval War College**

An advanced institution, located at Newport, R. I., for the training of selected Navy officers in the study of problems of naval warfare and the development of plans for naval operations.

### **Interned German Vessels**

Ninety-nine German ships, with gross tonnage of 635,406, were in American ports at the outbreak of war. They were seized by the United States under an act of May 12, 1917, questions of compensation being left to be determined at the end of the war. Repairs (made necessary by injuries done them by their crews while interned, under orders of Bernstorff) were made in record time, and they were put into service by this country in transporting troops and supplies to Europe, etc.

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### **Sinn Fein**

An Irish revolutionary society aiming at both independence and the cultural development of the Irish race. It is equally opposed to the Nationalists and the Unionists, and is the more alluring through its inclusion of many men of letters and art. On Easter, 1916, it precipitated a bloody revolt at Dublin, with which Germany tried to co-operate. The outbreak was suppressed without great difficulty.

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### **"Pill Boxes"**

Trench warfare was modified during the World War by a system of defense resorted to by the Germans in Flanders, in which steel and concrete turrets were connected by trenches and barbed wire entanglements and offered greater resistance to barrage fire than did the open trenches.

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### **"Tommy Atkins"**

"Tommy," or "Tommy Atkins," is the word commonly used to designate the British private soldier. From 1815 the specimen or model forms issued by the Government in the official regulations were often filled in with the name of Thomas Atkins, thus: "Description, service, etc., of Thomas Atkins, private, No. 6 Troop," etc. From this practice originated the custom of referring to the private soldier as Thomas Atkins, which was naturally shortened to Tommy Atkins.

### **"Poilu"**

The word used affectionately by the French people to designate their soldiers in the World War. The term comes from the French word *poil*, meaning hair, especially the hair or fur of animals or the hair or beard of man. Hence it is commonly supposed that the term *poilu* came to be applied to the French soldiers because when they were in the trenches they did not shave, as the British soldiers did. The French soldier was *homme poilu*, bearded man. Far from being a term of reproach, however, the term would naturally signify courage, particularly since the French phrase *brave a trois poils* is an idiomatic expression meaning a man of known courage.

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### **"God Save the King" Revised**

England felt during the World War that "God Save the King!" had become outgrown; that it was too English—that is, restricted to England. The Royal Colonial Institute, feeling the need of an "empire verse," instituted a competition, in which 400 or more competitors entered, and the judges, Herbert Warren, Edmund Gosse and Laurence Binyon, selected the following:

Wide o'er the linking seas,  
Polar and tropic breeze,  
Our song shall ring;  
Brothers of each domain,  
Bound but by Freedom's chain,  
Shout as your sires again,  
"God Save the King!"

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### **"Spurlos Versenkt"**

A German phrase meaning "sunk without leaving a trace," contained in a secret telegram from Luxburg, the German minister at Buenos Aires. The telegram (of May 19, 1917) advised that Argentine steamers be "spared if possible or else sunk without a trace being left," notwithstanding the fact that Argentine was neutral and he was enjoying her official hospitality.



### **Sinking of the "Lusitania"**

About 2 p. m., on May 7, 1915, the great Cunard liner *Lusitania*, on a voyage from New York, with 1,918 persons on board, was sunk without notice by the German submarine *U-39*, 10 miles off Old Head of Kinsale. The vessel went down 21 minutes after the attack, with resultant loss of 1,154 lives, including men, women, and children, of whom 114 were Americans. The Berlin Government at first asserted that the *Lusitania* was, "of course, armed"; and German agents in New York procured testimony, which was subsequently proved in court to have been perjured, to bolster up this falsehood.

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### **"Melting Pot"**

A name given to the United States because its historic policy has been to keep open doors to the oppressed peoples of all nations and to merge those who accept its hospitality into one nation of common language and common political ideals. "America is not made out of a single stock. Here we have a great melting pot." (President Wilson, Music Hall speech, Cincinnati, Oct. 26, 1916.)

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### **Military Resources of the United States**

These are expressed in man power and in material terms. The population of the country in 1915 was probably 100,000,000. There are more than 20,000,000 men in the United States between the ages of 18 and 45 years. It was computed that at least one-half of these would be available for active military service. Perhaps 600,000 more youths of fighting capacity would come of age each year if the war were prolonged. It was estimated at the outbreak of the war in 1914 that the United States had \$1,887,270,664 in gold, approximately \$19 per capita. On October 1, 1916, this total had been so increased that it was more than \$26 per capita. We had silver and paper in circulation equal to \$15.50 per capita. Our total stock of money

when we declared war on Germany was about \$4,200,000,000, or \$42 per capita. The taxable wealth of the country was set down in 1914 at \$187,739,071,090, about \$19.65 per person, making us the richest people in the world. The resources of the United States—agricultural, mineral, and manufacturing—founded upon our native supplies are immense and are capable of vast and rapid expansion.

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### **Triple Alliance**

An agreement by Germany, Austria, and Italy in 1882 for their mutual defense. The full and exact text of the treaties still remains secret, but the alliance gave shape to European relations for more than 30 years. In 1914 Germany claimed to be bound by the treaties to protect Austria against attack by Russia. Italy, however, denied that Austria was attacked, insisted that Austria was the aggressor, that her designs in the Balkans would endanger Italy's own safety, and not only declined to fight in the Triple Alliance, but, later, entered the war against her old allies.

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### **President Wilson at the Peace Conference**

Contrary to a widespread impression, neither the U. S. Constitution nor our statutory law contains anything which forbids the President to leave the boundaries of the country. Nevertheless, no President had gone counter to the prevailing custom until Grover Cleveland, on one of his famous water trips, found himself outside the three-mile limits of our Atlantic Coast territorial waters. President Taft, on Oct. 16, 1909, met President Diaz, of Mexico, in ceremonial greeting at or near El Paso, Texas, on a strip of disputed territory known as El Chamizal. Indeed, after a reception on the American side of the line by President Taft, the latter paid a return visit to Diaz on the Mexican side. Later President Taft again left the country when he visited the Panama Canal.

### Universal Military Service

The system of compulsory service, under which it is incumbent upon each young man capable of bearing arms to drill and familiarize himself with soldierly duties for a period of time, one, two or three years, that he may be in the highest degree useful to his country at the outbreak of war. The system has long been in general use in continental European countries.

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### U-Boats

The common abbreviation of *Unterseebooten*, or "under-sea boats," otherwise submarines.

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### Verdun

The military key to the west front in the World War, which the German Crown Prince tried to take in 1916. It has been, since 1871, the most important of the French defenses on the eastern frontier between the Argonne and the Vosges. During the German advance of 1914 Verdun held out under violent attack, although the Germans were able to push forward a deep salient to the south at St. Mihiel. In February, 1916, the armies of the German Crown Prince began a violent assault upon Verdun, which lasted six months and which was conceived in the hope of compelling the retirement of the French in Lorraine and Alsace and also of re-establishing German morale. At first the German offensive proved irresistible and led to the capture of a large portion of the fortified area around Verdun and of such important forts as Douaumont and Vaux. But their losses were terrific. Verdun was called "the grave" by German soldiers, and the final check administered to their attacks by the French apparently marked the end of German offensive power on the western front. A counter offensive organized by Gen. Nivelle in October, 1916, and another in August, 1917, enabled the French at small cost quickly to reclaim practically all the ground they had lost in the great German attack of 1916.

### **Virgin Islands**

This group of islands, formerly known as the Danish West Indies, came into the possession of the United States in 1917, through purchase. The size and character of the islands make them of negligible value for their own products; they are wholly dependent upon the United States for a market and for their imports. But their position, commanding the trade routes from Europe to the Panama Canal, makes them of importance to the United States. Easily fortified, the islands are of great value in the defense of the canal and simplify the problem of policing the Caribbean. The United States has three times offered to purchase the islands. In 1865 a proposition of Secretary Seward, whereby we were to acquire the islands for seven and a half million dollars, failed of ratification by the Senate. Again, in 1902, Secretary Hay concluded a treaty by which the islands were to become ours upon payment of \$5,000,000. German influence is said to have defeated the treaty in the Danish upper house. The third effort proved successful.

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### **"War Babies"**

A nickname applied to a group of American industrial stocks, such as American Locomotive Co. and Bethlehem Steel Co., whose values and profits became so greatly inflated after the outbreak of the war in Europe that they became the subject of wild speculation.

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### **War Risk Insurance**

By an act of September 2, 1914, a Bureau of War Risk Insurance was established for the insurance of shipping and commerce at reasonable rates. Up to June 30, 1917, policies had been issued to the amount of \$623,964,598. By an act of June 12, 1917, the bureau was empowered to extend its insurance to officers and seamen of American merchant ships. On Oct. 6, 1917, the law was further amended to provide for insuring military service men.

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### **"Watchful Waiting"**

The term applied by President Wilson to his Mexican policy. "I do not hesitate to say, now that we see it in retrospect," said President Carranza's legal representative in Washington, "that the policy pursued by President Wilson was the only one that could have produced the re-establishment of constitutional government in Mexico, and it has already proven to be the biggest asset the United States has in Mexico."

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### **Zeppelins**

A type of dirigible balloon, lifted by gas bags held in an aluminum framework, and propelled by gasoline engines; designed by the late Count Ferdinand von Zeppelin, whose experiments with aircraft, about 1906, attracted wide attention. In war the Zeppelins were used for observation purposes, especially at sea, and for raids on enemy country. German aircraft, including Zeppelins, raided England 34 times between January 19, 1915, and October 1, 1917, killing outright 865 men, women, and children, and wounding over 2,500. For military purposes the difficulties in the use of Zeppelins and other balloons are size, cost, vulnerability, and difficulty of storage. Experience led to a greater use of airplanes and a lessening use of dirigible balloons.

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### **Draft Evasions**

Up to July 1, 1918, Department of Justice investigations had rounded up 23,439 men who sought to evade the draft and had caused their induction into military service. More than 220,000 cases of men who for some reason failed to file questionnaires or to appear for physical examination were also investigated.

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### **U. S. Patents Granted**

A thousand patents a week are granted by the U. S. Patent Office at Washington. More than 1,200,000 have been granted in all. Less than 10 per cent have been commercial successes.

### **Deaths Due to Super-Guns**

In Paris alone, exclusive of its suburbs, the following were the deaths due to German airplane bombs, long range cannon, etc., during the World War: In 1914, forty-five bombs were dropped. In 1915, seventy bombs, sixty-two of them on March 20, fell on the city. In 1916 the enemy employed sixty-one bombs against Paris and in 1917 eleven. During the last ten months of the war there were 1,211 casualties from 396 bombs. Airplanes and Zeppelins dropped 228 bombs on Aug. 6, 1918, killing two persons and injuring 392. The long range cannon fired 168 shells on Paris, killing 196 and wounding 417. On Good Friday, 1918, more than 100 persons were killed.

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### **Enemy Aliens**

According to the annual report of the Attorney General covering the war activities of the Department of Justice, 6,000 enemy aliens were arrested on presidential warrants and examined with a view to internment. Most enemies interned were German men, there being comparatively few German women or Austro-Hungarians. About 480,000 Germans were registered in the nation-wide canvass—260,000 men and 220,000 women.

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### **American Protective League**

The American Protective League, with a volunteer membership of 250,000 and branch organizations in nearly every city and town in the country, was one of the striking developments of the World War. It was an unofficial adjunct to the Secret Service and played a great but, during the war, a very mysterious, part in neutralizing the effects of German and pro-German plotting, in bringing spies to the attention of the authorities, shadowing suspects, etc. Its patriotic members flocked to it from every walk of life and it is said that over 3,000,000 investigations were conducted by it.

### Hague Conference

With a view to securing concerted action in respect to the maintenance of peace and the amelioration of war on land and sea, and also, if possible, an agreement looking to a gradual reduction of military and naval armaments, a conference of delegates met at The Hague on May 18, 1899, in response to the invitation of the Czar of Russia. A second conference, called, upon the suggestion of the President of the United States, by the Czar of Russia, met at The Hague on June 15, 1907, and adjourned on October 19 following, having adopted 13 important international conventions, as follows: I. A convention for the pacific settlement of international conflicts, being an amendment of the corresponding agreements of July 29, 1899. II. A convention relative to the recovery of contractual debts. III. A convention relative to the opening of hostilities. IV. A convention concerning the laws and customs of war on land. V. A convention concerning the rights and duties of neutral states and individuals in land warfare. VI. A convention regarding the treatment of the enemy's merchant ships at the outbreak of hostilities. VII. A convention regarding the transformation of merchant ships into vessels of war. VIII. A convention in regard to the placing of submarine mines. IX. A convention concerning the bombardment of undefended towns by naval forces. X. A convention for the adaptation of the principles of the Geneva convention to maritime warfare. XI. A convention imposing certain restrictions upon the right of capture in maritime war. XII. A convention providing for the establishment of an international prize court. XIII. A convention defining the rights and duties of neutral states in maritime war.

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### Deaths From Influenza

The influenza which swept the United States in 1918 caused 111,688 deaths in forty-six cities.

### **Production of Airplanes and Airplane Motors**

The production of airplane motors of all types in the United States during the World War was 31,814, of which 15,131 were Liberty motors, and when the armistice was signed contracts had been let for 95,993 motors. In October, 1918, alone, 5,603 motors were turned out; 12,000 airplanes and 700 kite balloons were also produced during the war.

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### **Victory Flight of 212 U. S. Airplanes**

Perhaps the most impressive airplane spectacle ever staged up to that time was the victory flight of 212 U. S. airplanes at San Diego, Cal., on Nov. 27, 1918, in honor of the signing of the armistice and to celebrate the achievements of American airmen in France. The planes were from the Government flying fields near the city and every machine returned without accident after a flight lasting more than two hours. The machines were controlled in the air by radio-telephonic communication. It was said that this was the first time in the history of aviation that so many airplanes were directly controlled by voice. It was estimated that the 212 machines covered a total distance of 300,000 miles, remaining in the air an aggregate of 424 hours.

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### **Small Races of Europe**

From the Baltic to the Adriatic and Aegean seas, stretching all the way across Europe, is a succession of small races, including 3,000,000 Finns, 1,500,000 Esthonians, 1,500,000 Letts, 4,000,000 Lithuanians, 18,000,000 Poles, 4,500,000 Ruthenians in what was formerly Austria-Hungary, 10,000,000 Czecho-Slovaks, 10,000,000 Jugo-Slavs, and 1,000,000 Rumanians of Transylvania, etc., well over 50,000,000 in all. Most of these peoples have hitherto been subject to the Central Powers, and their organization into free, republican, and above all, self-disciplined and stable, nations will be vastly significant if it can be permanently achieved.



### **Rejections Under the Selective Draft**

During the pre-war period in the United States, from 1913 to 1915, more than 80 per cent of those volunteering for service were rejected. It must be remembered, however, that the recruiting officers were not medical men and that they were hampered by a set of more or less arbitrary and out-of-date rules.

Under the Selective Draft there was a different and much more encouraging showing. According to the report of Gen. Crowder on the first draft, that of June 5, 1917, 703,756 or 29.11 per cent of the 2,510,706 men examined, were rejected by the physicians of the draft boards, while, of those accepted thus, 5.8 per cent were subsequently rejected by medical boards at the cantonments. 21.68 per cent were thrown out because of defective sight. The cause that was second in importance was bad teeth. Poor hearing accounted for 5.94 per cent of the rejections, hernia for 7.47 per cent, heart disease for 5.87, tuberculosis for 5.37, mental deficiency for 4.53 per cent, venereal diseases for 4.27 per cent, physical undevelopment for 4.06 per cent, flat feet for 3.77 per cent, underweight for 1.59 per cent, alcohol and drug habits combined for only .77 of 1 per cent.

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### **American Airplanes in the War**

American airmen in France brought down a total of 854 German airplanes and 82 German balloons, against an American loss of 271 planes and 45 balloons. Destruction of 354 of the enemy planes and 57 balloons was officially confirmed. The total casualties of the American air service in action are given as 442, including 109 killed, 103 wounded, 200 missing, twenty-seven prisoners, and three interned. When the armistice came there were thirty-nine American air squadrons at the front. They included twenty pursuit, six day, and one night bombardment squadrons and five army, twelve corps, and one night observation squadrons. The total personnel was

2,161 officers and 22,351 men at the front, with an additional 4,643 officers and 28,353 men in the service of supply. Eight American flying officers were detailed with the British army and forty-nine officers and 525 men with the French forces. The total strength of the American air service in France was 58,090, of whom 6,861 were officers. This was exclusive of the air service mechanics' regiment with the French army, numbering 109 officers and 4,744 men.

### Uncle Sam's Gas Masks

Gas mask production in the United States was begun in May, 1917. 20,000 masks were shipped abroad during the first eight weeks. Up to the signing of the armistice, 5,000,000 masks had been produced, 3,000,000 extra canisters, 500,000 horse masks, and large numbers of mustard gas suits and other equipment. Production was then going forward at the rate of 40,000 a day, and the masks had been so improved that they could be worn almost indefinitely, even in sleep, with comparatively little discomfort.

### America's Food Shipments to Allies

U. S. Food Administrator Hoover summarized the shipments of foodstuffs from this country to the allied countries during the World War as follows:

Shipments of meats and fats, including meat and dairy products, vegetable oils, etc:

|             |                |                      |
|-------------|----------------|----------------------|
| Fiscal year | 1916-17.....   | 2,166,500,000 pounds |
| "           | " 1917-18..... | 3,011,100,000 "      |

|                |             |   |
|----------------|-------------|---|
| Increase ..... | 844,600,000 | " |
|----------------|-------------|---|

Shipments of cereals and cereal products:

|             |                |                     |
|-------------|----------------|---------------------|
| Fiscal year | 1916-17.....   | 259,900,000 bushels |
| "           | " 1917-18..... | 340,800,000 "       |

|                |            |   |
|----------------|------------|---|
| Increase ..... | 80,900,000 | " |
|----------------|------------|---|

Value of food shipments, fiscal year

|               |                 |
|---------------|-----------------|
| 1917-18 ..... | \$1,400,000,000 |
|---------------|-----------------|

## New Weapons and Methods of the World War

Many weapons of the World War are of a wonder and strangeness dreamed of a few years ago by only the imagination of a Jules Verne. Others are a return to the warfare and implements of ancient times. Some of the products and methods of this greatest of all conflicts, new achievements of science or borrowings from ancient and medieval times or savagery, weapons of offense and weapons of defense in reply to them are:

|                                        | Nation Which In-<br>vented or Introduced. |
|----------------------------------------|-------------------------------------------|
| Airplane .....                         | United States                             |
| Submarine .....                        | United States                             |
| Tanks .....                            | Great Britain                             |
| Zeppelins.....                         | Germany                                   |
| Anti-Aircraft Guns ....                | Great Britain and France                  |
| Giant Land Guns .....                  | Germany                                   |
| High Powered Explosives .....          | General                                   |
| Trenches and Dugouts .....             | General                                   |
| Anti-Submarine Steel Nets.....         | Allies                                    |
| Anti-Submarine Depth Bombs .....       | Allies                                    |
| Hand Grenades .....                    | Germany                                   |
| Steel Darts .....                      | France                                    |
| Anti-Zeppelin Inflammatory Shells..... | Allies                                    |
| Barbed Wire Entanglements.....         | General                                   |
| Poison Gas .....                       | Germany                                   |
| Anti-Gas Masks .....                   | Allies                                    |
| Tear Shells .....                      | Germany                                   |
| Goggles .....                          | Allies                                    |
| Star Shells .....                      | Germany                                   |
| Flesh-Burning Gas Shells.....          | Germany                                   |
| Smoke Screens on Land and Sea.....     | Allies                                    |
| Liquid Fire .....                      | Germany                                   |

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### Tanks

Heavy armored motor cars, propelled usually by "caterpillar drive" and used to break through enemy defenses, enfilade his trenches, or to cover attacks upon them. They were first used on September 15, 1916, by the British in their operations on the Somme, and were the decisive factor in General Byng's brilliant advance.

### History of the Red Cross

The sufferings of soldiers in the Crimean War first directed the world's humaner impulses toward measures for the systematic care of the wounded and gave permanent fame to the name of Florence Nightingale. In 1859, when the Swiss humanitarian, M. Henri Dunant, was visiting Italy as a tourist, he was caught in the dreadful carnage of the battle of Solferino. Dunant personally ministered to the wounded, and—what is more important—he organized volunteers in the vicinity to help him in the work. Soon after he formulated the first proposals for volunteer associations to care for the wounded of war and for the neutralization of the personnel of such relief association. His prophetic vision even embraced the services which such associations could render in time of epidemics, floods, and other catastrophes. M. Dunant's appeals resulted in a preliminary conference held at Geneva in 1863, which in turn led to an official international conference at Geneva in 1864. During this second conference the delegates from the United States made a valuable—perhaps a decisive—contribution by showing that the United States Sanitary Commission, by actual relief operations, had already solved problems which were troubling the conference and were making its success a matter of doubt. The Geneva convention, adopted at that time, revised in 1906, and given additional force by The Hague conferences, was the formal beginning of the Red Cross, and for that reason is sometimes called the "Red Cross treaty." The name "Red Cross" comes from the insignia adopted by the conference.

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### U. S. Naval Vessels Lost

Only 44 vessels of the Navy, including army and cargo transports manned by naval crews, were lost from the declaration of war, April 6, 1917, until hostilities ceased Nov. 11. And only 12 of these were destroyed by enemy submarines.



## The Greatest Battles of the 18th and 19th Centuries

| Name.              | 18th Century. | Date. | Men Engaged. |
|--------------------|---------------|-------|--------------|
| Blenheim .....     |               | 1704  | 116,000      |
| Ramilies .....     |               | 1706  | 122,000      |
| Oudenard .....     |               | 1708  | 170,000      |
| Malplaquet .....   |               | 1709  | 200,000      |
| Dettingen .....    |               | 1743  | 97,000       |
| Fontenoy .....     |               | 1745  | 90,000       |
| Prague .....       |               | 1757  | 124,000      |
| Kollin .....       |               | 1757  | 87,000       |
| Leuthen .....      |               | 1757  | 111,000      |
| Breslau .....      |               | 1757  | 110,000      |
| Zorndorf .....     |               | 1758  | 84,700       |
| Hochkirch .....    |               | 1758  | 132,000      |
| Zullchau .....     |               | 1759  | 113,000      |
| Torgau .....       |               | 1760  | 106,000      |
| Castiglione .....  |               | 1796  | 90,000       |
| 19th Century.      |               |       |              |
| Hohenlinden .....  |               | 1800  | 106,000      |
| Austerlitz .....   |               | 1805  | 148,000      |
| Eylau .....        |               | 1807  | 133,500      |
| Heilsburg .....    |               | 1807  | 169,000      |
| Friedland .....    |               | 1807  | 142,000      |
| Eckmühl .....      |               | 1809  | 145,000      |
| Aspern .....       |               | 1809  | 170,000      |
| Wagram .....       |               | 1809  | 300,000      |
| Talavera .....     |               | 1809  | 109,000      |
| Borodino .....     |               | 1812  | 263,000      |
| Bautzen .....      |               | 1813  | 300,000      |
| Vittoria .....     |               | 1813  | 143,000      |
| Leipsic .....      |               | 1813  | 440,000      |
| Le Rothiere .....  |               | 1814  | 120,000      |
| Laon .....         |               | 1814  | 112,000      |
| Ligny .....        |               | 1815  | 159,000      |
| Waterloo .....     |               | 1815  | 170,000      |
| Magenta .....      |               | 1859  | 108,000      |
| Solferino .....    |               | 1859  | 295,000      |
| Civil War.         |               |       |              |
| Shiloh .....       |               | 1862  | 98,000       |
| Seven Pines .....  |               | 1862  | 90,000       |
| Malvern Hill ..... |               | 1862  | 150,000      |

|                        |      |         |
|------------------------|------|---------|
| Second Manassas .....  | 1862 | 127,000 |
| Antietam .....         | 1862 | 128,000 |
| Fredericksburg .....   | 1862 | 190,000 |
| Chickamauga .....      | 1863 | 128,000 |
| Chancellorsville ..... | 1863 | 192,000 |
| Gettysburg .....       | 1863 | 163,000 |
| Chattanooga .....      | 1863 | 99,000  |
| Spottsylvania .....    | 1864 | 150,000 |
| Cold Harbor .....      | 1864 | 168,000 |
| Wilderness .....       | 1864 | 179,000 |
| <hr/>                  |      |         |
| Koeniggratz .....      | 1866 | 417,000 |
| Worth .....            | 1870 | 135,000 |
| Vionville .....        | 1870 | 168,000 |
| Gravelotte .....       | 1870 | 320,000 |
| Plevna .....           | 1877 | 115,000 |

### **The Monroe Doctrine**

A statement of principles made in the famous message of December 2, 1823. The occasion of the utterance was the threat by the so-called Holy Alliance to interfere forcibly in South America with a view to reseating Spain in control of her former colonies there. President Monroe, pointing to the fact that it was a principle of American policy not to intermeddle in European affairs, gave warning that any attempt by the monarchies of Europe "to extend their system to any portion of this hemisphere" would be considered by the United States "as dangerous to our peace and safety." This warning fell in line with British policy, which was then directed by Canning, and so proved efficacious. In a later section of the same message the proposition was also advanced that the American Continent was no longer subject to colonization. This clause of the doctrine was the work of Monroe's Secretary of State, J. Q. Adams, and its occasion was furnished by the fear that Russia was planning to set up a colony at San Francisco, then the property of Spain, whose natural heir on the North American Continent, Adams held, was the United States.

**U. S. Casualties by Divisions**

Battle deaths, missing, and prisoners in thirty combat divisions of the U. S. Army in the World War, reported to Jan. 10, 1919, two months after the armistice was signed, field signal battalions and trains not included, are given as follows:

| Div.     | Killed in<br>action. | Died of<br>wounds. | Missing<br>in action. | Pris-<br>oners. | Total. |
|----------|----------------------|--------------------|-----------------------|-----------------|--------|
| 1.....   | 2,303                | 1,050              | 1,789                 | 106             | 5,248  |
| *2.....  | 1,383                | 696                | 813                   | 73              | 2,965  |
| 3.....   | 1,901                | 589                | 873                   | 254             | 3,617  |
| 4.....   | 1,500                | 618                | 817                   | 51              | 2,986  |
| 5.....   | 970                  | 505                | 969                   | 60              | 3,504  |
| 6.....   | 49                   | 67                 | 3                     | 3               | 122    |
| 7.....   | 175                  | 98                 | 50                    | 3               | 326    |
| 26.....  | 1,388                | 660                | 462                   | 354             | 2,864  |
| 27.....  | 1,302                | 404                | 330                   | 158             | 2,194  |
| 28.....  | 1,544                | 553                | 1,174                 | 619             | 3,890  |
| 29.....  | 597                  | 220                | 267                   | 33              | 1,117  |
| 30.....  | 1,084                | 415                | 251                   | 22              | 1,772  |
| 32.....  | 1,694                | 708                | 768                   | 43              | 3,213  |
| 33.....  | 632                  | 261                | 249                   | 29              | 1,171  |
| 35.....  | 596                  | 217                | 808                   | 112             | 1,733  |
| 36.....  | 358                  | 116                | 393                   | 2               | 869    |
| 37.....  | 658                  | 289                | 303                   | 0               | 1,250  |
| 42.....  | 1,702                | 723                | 440                   | 85              | 2,950  |
| 77.....  | 1,275                | 552                | 529                   | 336             | 2,692  |
| 78.....  | 915                  | 339                | 508                   | 63              | 1,825  |
| 79.....  | 880                  | 352                | 1,142                 | 15              | 2,389  |
| 80.....  | 636                  | 337                | 286                   | 96              | 1,355  |
| 81.....  | 203                  | 86                 | 79                    | 2               | 370    |
| 82.....  | 808                  | 324                | 271                   | 189             | 1,592  |
| 88.....  | 20                   | 33                 | 7                     | 6               | 66     |
| 89.....  | 838                  | 427                | 256                   | 4               | 1,525  |
| 90.....  | 936                  | 327                | 287                   | 35              | 1,585  |
| 91.....  | 934                  | 275                | 470                   | 23              | 1,702  |
| 92.....  | 109                  | 50                 | 47                    | 5               | 211    |
| 93.....  | 372                  | 105                | 8                     | 4               | 489    |
| Totals.. | 27,762               | 11,396             | 14,649                | 2,785           | 56,592 |

\*Two regiments of marines not included.

As there were only 2,785 listed prisoners out of a total of 14,649 missing in action, 11,864 were left unaccounted for and most of these will doubtless have to be added to the dead.

### **U. S. Marine Casualties**

Figures for the Marine Brigade of the Second Division in the World War, complete to Jan. 1, 1919, show killed and died of wounds, 55 officers and 1,507 men; missing in action, 2 officers, 695 men; severely wounded, 91 officers and 1,802 men; slightly wounded, 186 officers and 5,296 men; gassed, 31 officers and 1,854 men. Total casualties, all causes, 365 officers, 11,152 men.

### **U. S. Naval Fatalities**

On the authority of U. S. Surgeon-General Braisted, deaths in the Navy from "war causes" totaled 1,233 during the Great War.

### **U. S. Death Rate in World War and Previous Conflicts**

Official figures give U. S. death rate at the front in the World War as 57 per 1,000 per year; for the entire army, including camps at home, 20 per 1,000 per year. Disease rate, 17 per 1,000 per year in the A. E. F. and 16 at home. The death rate of the British expeditionary forces is given as 110 per 1,000 per year. In past conflicts disease killed more men than battle, but this was reversed in the World War.

The table of comparative battle and disease death rates per 1,000 per year for wars in which the United States has engaged since the war of 1812, follows:

|                             | Battle<br>death<br>rate. | Disease<br>death<br>rate. |
|-----------------------------|--------------------------|---------------------------|
| Mexican war .....           | 15                       | 110                       |
| Civil war (north).....      | 33                       | 65                        |
| Spanish war .....           | 5                        | 26                        |
| Present war (A. E. F.)..... | 57                       | 17                        |



### The Great War's Toll

The toll in dead, wounded and missing paid by the six largest nations in the Great War was estimated in Dec., 1918, as follows:

|                   | Dead      | Wounded<br>and missing | Total     |
|-------------------|-----------|------------------------|-----------|
| France .....      | 1,400,000 | No report              | 1,400,000 |
| Great Britain ... | 1,000,000 | 2,032,122              | 3,032,122 |
| Italy .....       | 500,000   | 1,000,000              | 1,500,000 |
| United States ..  | 56,422    | 175,385                | 231,807   |
| Germany .....     | 2,000,000 | 4,066,769              | 6,066,769 |
| Russia .....      | 3,000,000 | 5,000,000              | 8,000,000 |

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Grand total .....20,230,698

### Expenditures by U. S. in Former Wars

War of 1812 With Great Britain, From June 18, 1812, to Feb. 17, 1815

| Year | Total*       | War          | Navy        |
|------|--------------|--------------|-------------|
| 1812 | \$20,280,000 | \$11,817,000 | \$3,959,000 |
| 1813 | 31,681,000   | 19,652,000   | 6,446,000   |
| 1814 | 34,720,000   | 20,350,000   | 7,311,000   |
| 1815 | 32,943,000   | 14,794,000   | 8,660,000   |

War With Mexico, From April 24, 1846, to July 4, 1848

| Year | Total*       | War          | Navy        |
|------|--------------|--------------|-------------|
| 1846 | \$27,261,000 | \$10,413,000 | \$6,455,000 |
| 1847 | 54,920,000   | 35,840,000   | 7,900,000   |
| 1848 | 47,618,000   | 27,688,000   | 9,408,000   |
| 1849 | 43,499,000   | 14,558,000   | 9,786,000   |

Civil War, From 1861 to 1865

| Year | Total*        | War           | Navy          |
|------|---------------|---------------|---------------|
| 1860 | \$ 63,201,000 | \$ 16,472,000 | \$ 11,514,000 |
| 1861 | 66,650,000    | 23,001,000    | 12,387,000    |
| 1862 | 469,569,000   | 389,173,000   | 42,640,000    |
| 1863 | 718,733,000   | 603,314,000   | 63,261,000    |
| 1864 | 864,968,000   | 690,391,000   | 85,705,000    |
| 1865 | 1,295,099,000 | 1,030,690,000 | 122,617,000   |

Spanish-American War, From April 21, 1898, to Dec. 10, 1898

| Year | Total*        | War   | Navy  |
|------|---------------|-------|-------|
| 1898 | \$809,142,000 | ..... | ..... |

Philippine Insurrection, etc., 1899-1900

| Year      | Total*          | War   | Navy  |
|-----------|-----------------|-------|-------|
| 1899-1900 | \$1,092,784,000 | ..... | ..... |

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\*The sums of the expenditures of the Army and Navy do not equal the total given above. The difference was used for other Government expenses connected with the wars.

### World's Tonnage Losses

An official announcement made in December, 1918, placed the world's losses in merchant ton-

nage from enemy action and marine risk from the beginning of the World War to the end of October, 1918, at 15,053,786 gross tons. In the same period 10,849,527 tons were constructed and 2,392,675 tons of enemy vessels were captured, leaving a net tonnage loss of 1,811,584 tons.

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### **Russian War Losses**

Shortly after the signing of the armistice, the director of the Russian information bureau in this country estimated the Russian casualties in the World War at "not less than 8,000,000, of whom 3,000,000 were killed and about 1,000,000 disabled for life."

### **ANOTHER COMPUTATION**

Russia's casualties in the World War total 9,150,000 men, according to another computation. Of this number 1,700,000 were killed. The disabled men number 1,450,000, while 3,500,000 other soldiers were wounded. The Russians taken prisoner total 2,500,000.

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### **Austria-Hungary's Losses**

The casualties of the Austro-Hungarian armies from the beginning of the World War up to the end of May, 1918, were slightly more than 4,000,000 men, according to official statistics. Eighteen generals out of 310 were killed.

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### **French War Losses**

Casualties in the French Army during the World War, excluding Colonial troops, up to Nov. 1, 1918, were 4,762,800, according to official figures. Men killed in action or dead of wounds numbered 1,028,000, and to this total must be added 299,000 listed as missing and given up for lost, making a total of 1,327,800. The number of wounded was 3,000,000, with 435,000 listed as prisoners. Three-fourths of the wounded recovered, either entirely or at least to such an extent as to be fit to work again.

### Italy's War Losses

During the World War the Italian army lost 15,600 officers killed and over 30,000 wounded. The losses in men are given as approximately 500,000 killed or died of wounds, 500,000 permanently disabled—1,500,000 total casualties. Money cost is given as \$10,000,000,000, and it is claimed that Italy had more men under arms in proportion to population than any other country. 5,500,000 out of a total population of only 36,000,000 were called to the colors.

### Canadian War Losses

|                       | Officers | Men     | Total   |
|-----------------------|----------|---------|---------|
| Killed in action..... | 1,842    | 33,824  | 35,666  |
| Died of wounds.....   | 614      | 11,806  | 12,420  |
| Died of disease.....  | 220      | 5,185   | 5,405   |
| Wounded .....         | 7,130    | 148,669 | 155,799 |
| Prisoners of war..... | .....    | .....   | 3,575   |
| Presumed dead .....   | 142      | 4,529   | 4,671   |
| Missing .....         | 41       | 384     | 425     |
| Deaths in Canada..... | .....    | .....   | 2,221   |
| Totals.....           | 9,989    | 204,397 | 220,182 |
| Total deaths, 60,383. |          |         |         |

### Age of Nations in the Great War

Contrary to popular impression, the United States was one of the "old timer" nations engaged in the World War, not the most youthful—so far at least as the actual duration of the different formal governments was concerned. The most recently formed governments were, in the strict sense: Roumania, Bulgaria and Serbia, according to the Florida Times-Union. Next was Germany, the German Empire having dated back as such only to 1871. Next came Italy, which became a kingdom in 1859 or 1860. Thus at least five European nations in the great conflict were "younger" than the United States, which existed in precisely the same governmental form nearly one hundred years before the German Empire came into being. And if we were to include China

and all the other countries in the war the showing would be still more striking. It will be understood, of course, that all of these countries are infinitely older than our own, historically; we are speaking only of the duration of the governmental form under which they went to war.

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### **Vast Surplus of Army Clothing**

November 1st, 1918, ten days before hostilities ceased, found the United States Government in possession of enormous quantities of clothing, including 5,000,000 cotton coats, 6,000,000 woolen coats, 4,000,000 overcoats, 9,000,000 flannel shirts, 45,000,000 pairs of winter and summer drawers, 44,000,000 winter and summer undershirts, 11,000,000 pairs of shoes, 46,000,000 pairs of socks, and 5,000,000 blankets.

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### **German Propaganda**

A. Bruce Bielaski, Chief of the Bureau of Investigation of the U. S. Department of Justice during the World War, is authority for the statement that it was possible to trace expenditures of \$27,850,000 directly to German propagandists. Of this amount no less than \$12,000,000 was raised in the United States, he said.

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### **Abdication Dates**

Czar Nicholas, March 15, 1917.

King Constantine of Greece, June 12, 1917.

King Ferdinand of Bulgaria, Oct. 3, 1918.

King Boris of Bulgaria, Nov. 2, 1918.

Kaiser Wilhelm, Nov. 9, 1918.

Emperor Charles of Austria, Nov. 11, 1918.

King Friedrich August of Saxony, Nov. 12, 1918.

Duke Ernst Augustus of Brunswick, Nov. 12, 1918.

Grand Duke William Ernst of Saxe-Weimar, Nov. 12, 1918.

Prince Leopold of Lippe-Detmold, Nov. 12, 1918.

Grand Duke Friedrich of Baden, Nov. 12, 1918.

Grand Duke Ernst Ludwig of Hesse, Nov. 12, 1918.



**Men Furnished by States in World War**

|                  |         |                   |        |
|------------------|---------|-------------------|--------|
| New York .....   | 367,864 | Mississippi ..... | 54,295 |
| Pennsylvania ..  | 297,891 | South Carolina.   | 53,482 |
| Illinois .....   | 251,074 | Connecticut ....  | 50,069 |
| Ohio .....       | 200,293 | Nebraska .....    | 47,205 |
| Texas .....      | 161,065 | Maryland .....    | 47,054 |
| Michigan .....   | 135,485 | Washington ...    | 45,154 |
| Massachusetts .  | 132,610 | Montana .....     | 36,293 |
| Missouri .....   | 128,544 | Colorado .....    | 34,393 |
| California ..... | 112,514 | Florida .....     | 33,331 |
| Indiana .....    | 106,581 | Oregon .....      | 30,116 |
| New Jersey ....  | 105,207 | South Dakota...   | 29,686 |
| Minnesota .....  | 99,116  | North Dakota...   | 25,803 |
| Iowa .....       | 98,781  | Maine .....       | 24,252 |
| Wisconsin .....  | 98,211  | Idaho .....       | 19,016 |
| Georgia .....    | 85,506  | Utah .....        | 17,361 |
| Oklahoma .....   | 80,169  | Rhode Island ..   | 16,861 |
| Tennessee .....  | 75,825  | District of Co-   |        |
| Kentucky .....   | 75,043  | lumbia .....      | 15,930 |
| Alabama .....    | 74,678  | New Hampshire     | 14,374 |
| Virginia .....   | 74,062  | New Mexico ...    | 12,439 |
| North Carolina.  | 73,003  | Wyoming .....     | 11,393 |
| Louisiana .....  | 65,988  | Arizona .....     | 10,492 |
| Kansas .....     | 63,428  | Vermont .....     | 9,338  |
| Arkansas .....   | 61,027  | Delaware .....    | 7,484  |
| West Virginia..  | 55,777  | Nevada .....      | 5,105  |

The total of 3,757,624 included also 16,638 from Porto Rico, 5,664 from Hawaii, 2,108 from Alaska, 255 from the Philippine Islands, 1,138 not allocated, and 1,499 accredited to the American expeditionary force, comprising men who joined the army in Europe.

**Salaries of U. S. Army and Navy Officers**

| ARMY.                |          | NAVY.               |             |
|----------------------|----------|---------------------|-------------|
| General .....        | \$10,000 | Admiral .....       | \$10,000    |
| Lieut.-General ..... | 9,000    | Vice-Admiral .....  | 9,000       |
| Major-General .....  | 8,000    | Rear-Admiral ..     | 6,000-8,000 |
| Brigadier-General .  | 6,000    | Commodore .....     | 6,000       |
| Colonel .....        | 4,000    | Captain .....       | 4,000       |
| Lieut.-Colonel ..... | 3,500    | Commander .....     | 3,500       |
| Major .....          | 3,000    | Lieut.-Commander .  | 3,000       |
| Captain .....        | 2,400    | Lieutenant .....    | 2,400       |
| First Lieutenant. .  | 2,000    | Lieut. (jun. grade) | 2,000       |
| Second Lieutenant..  | 1,700    | Ensign .....        | 1,700       |

### U. S. War Loans to Allies

Great Britain, \$3,745,000,000; France, \$2,445,000,000; Italy, \$1,160,000,000; Russia, \$325,000,000; Belgium, \$183,520,000; Greece, \$15,790,000; Cuba, \$15,000,000; Serbia, \$12,000,000; Roumania, \$6,666,666, and Liberia, \$5,000,000.

In fact, up to Nov. 15, 1918, the United States had lent the allied governments more than \$8,000,000,000, a debt which all the gold produced outside of this country in the next twenty years would be insufficient to pay.

### Foreign Money Values in U. S. Currency

| Austria—                                | Approximate Value. |
|-----------------------------------------|--------------------|
| 1 Heller .....                          | 1/5 cent           |
| 1 Krone=100 Heller .....                | 19 cents           |
| Belgium—                                |                    |
| 1 Centime .....                         | 1/5 cent           |
| 1 Franc=100 centimes .....              | 19 cents           |
| England—                                |                    |
| 1 Farthing .....                        | 1/2 cent           |
| 1 Halfpenny .....                       | 1 cent             |
| 1 Penny .....                           | 2 cents            |
| 1 Shilling=12 pence .....               | 24 cents           |
| 1 Pound or sovereign = 20 shillings.... | \$4.87             |
| France—                                 |                    |
| 1 Centime .....                         | 1/5 cent           |
| 1 Franc=100 centimes .....              | 19 cents           |
| Germany—                                |                    |
| 1 Pfennig .....                         | 1/4 cent           |
| 1 Mark=100 pfennig .....                | 24 cents           |
| Italy—                                  |                    |
| 1 Centesimo .....                       | 1/5 cent           |
| 1 Lira=100 centesimi .....              | 19 cents           |
| Russia—                                 |                    |
| 1 Kopeck .....                          | 1/2 cent           |
| 1 Ruble=100 kopecks .....               | 51 cents           |

### Armistice Celebrations

One hundred and fifty-five tons of paper scraps are estimated to have been thrown into New York's streets during the armistice celebrations of November, 1918, entailing a cleaning-up bill of \$80,000.

### Cost of the World War

The following table gives in round numbers the war expenditures of all nations engaged in the World War up to May, 1919. The figures are believed to be substantially reliable:

| Countries.                                           | Amount.           |
|------------------------------------------------------|-------------------|
| Great Britain and dominions.....                     | \$38,000,000,000  |
| France .....                                         | 26,000,000,000    |
| United States .....                                  | 22,000,000,000    |
| Russia .....                                         | 18,000,000,000    |
| Italy .....                                          | 13,000,000,000    |
| Belgium, Roumania, Portugal and<br>Jugo-Slavia ..... | 5,000,000,000     |
| Japan and Greece.....                                | 1,000,000,000     |
| <hr/>                                                |                   |
| Total, Allies and U. S.....                          | \$123,000,000,000 |
| <br>                                                 |                   |
| Germany .....                                        | \$39,000,000,000  |
| Austria-Hungary .....                                | 21,000,000,000    |
| Turkey and Bulgaria.....                             | 3,000,000,000     |
| <hr/>                                                |                   |
| Total, Central Empires.....                          | \$63,000,000,000  |
| Grand total .....                                    | 186,000,000,000   |

### World's Debt Estimated

The National City Bank of New York estimated in January, 1920, that the world's debt, as the result of war, had increased from \$40,000,000,000 in 1914 to \$200,000,000,000. Paper currency throughout the world increased 600 per cent since 1914, while the gold reserve behind it increased only 40 per cent, according to statistics compiled by the bank.

### Foul Air in Wells

A good extemporized apparatus for removing carbonic acid gas from wells is simply an opened-out umbrella let down and rapidly hauled up a number of times in succession. The person who made and reports this experiment states that the effect was to remove the gas in a few minutes from a well so foul as to instantly extinguish a candle previous to use of the umbrella.

## FORMER WARS OF THE UNITED STATES

## STATEMENT OF THE NUMBER OF UNITED STATES TROOPS ENGAGED.

|                                            | Date           |                | Troops Engaged— |                                    |
|--------------------------------------------|----------------|----------------|-----------------|------------------------------------|
| Wars                                       | From—          | To—            | Regulars        | Volunteers Total<br>and<br>Militia |
| War of the Revolution.....                 | April 19, 1775 | April 11, 1783 | 130,711         | 58,750                             |
| Estimated additional .....                 | .....          | .....          | .....           | 105,330                            |
| Northwestern Indian Wars...                | Sept. 19, 1790 | Aug. 3, 1795   | .....           | 8,983                              |
| War with France.....                       | July 9, 1798   | Sept. 30, 1800 | .....           | *4,593                             |
| War with Tripoli.....                      | June 10, 1801  | June 4, 1805   | .....           | *3,339                             |
| Northwestern Indian War—                   |                |                |                 |                                    |
| General Harrison .....                     | Sept. 11, 1811 | Nov. 11, 1811  | 250             | 660                                |
| Creek Indian War.....                      | July 27, 1813  | Aug. 9, 1814   | 600             | 13,181                             |
| War of 1812 with Great Brit-<br>ain .....  | June 18, 1812  | Feb. 17, 1815  | 85,000          | 471,622                            |
| Seminole Indian War.....                   | Nov. 20, 1817  | Oct. 21, 1818  | 1,000           | 6,911                              |
| Black Hawk Indian War....                  | April 21, 1831 | Sept. 31, 1832 | 1,339           | 5,126                              |
| Cherokee disturbance or re-<br>moval ..... | 1836           | 1837           | .....           | 9,494                              |
|                                            |                |                |                 | 9,494                              |



## Wars of the United States—Continued

| WARS.                                     | DATE.          | From— | To—            | TROOPS ENGAGED. |                         |           |
|-------------------------------------------|----------------|-------|----------------|-----------------|-------------------------|-----------|
|                                           |                |       |                | Regulars.       | Militia and Volunteers. | Total.    |
| Creek Indian war or disturbance . . . . . | May 5, 1836    |       | Sept. 30, 1837 | 935             | 12,483                  | 13,418    |
| Florida Indian war.                       | Dec. 23, 1835  |       | Aug. 14, 1843  | 11,169          | 29,953                  | 41,122    |
| Aroostook disturbance . . . . .           | 1838           |       | 1839           | .....           | 1,500                   | 1,500     |
| War with Mexico . . . . .                 | April 24, 1846 |       | July 4, 1848   | 30,954          | 73,776                  | 104,730   |
| Apache, Navajo, and Utah war . . . . .    | 1849           |       | 1855           | 1,500           | 1,061                   | 2,561     |
| Comanche Indian war                       | 1854           |       | 1854           | .....           | 503                     | 503       |
| Seminole Indian war                       | 1856           |       | 1858           | .....           | 2,687                   | 2,687     |
| Civil war . . . . .                       | 1861           |       | 1865           | .....           | .....                   | 2,859,132 |
| Philippine insurrection . . . . .         | 1899           |       | 1900           | .....           | .....                   | 60,000    |
| Spanish-American war . . . . .            | 1898*          |       | 1899           | .....           | .....                   | 312,523   |

\*Naval forces engaged. The number of troops on the Confederate side during the Civil War was about 750,000.

### Wars of the United States—Continued

The number of casualties in the volunteer and regular armies of the United States, during the Civil War, was reported by the Provost-Marshal-General:

Killed in battle, 61,362; died of wounds, 34,727; died of disease, 183,287; total died, 279,376; total deserted, 199,105.

Number of soldiers in the Confederate service, who died of wounds or disease (partial statement), 133,821. Deserted (partial statement), 104,428.

Number of United States troops captured during the war, 212,608; Confederate troops captured, 476,169.

Number of United States troops paroled on the field, 16,431; Confederate troops paroled on the field, 248,599.

Number of United States troops who died while prisoners, 29,725; Confederate troops who died while prisoners, 26,774.

The casualties on the American side in the War of 1812 were: Killed, 1,877; wounded, 3,737; total, 5,614.

The casualties on the American side in the war with Mexico, 1846-48, were: Killed, 1,049; died of wounds, 904; wounded, 3,420.

### Center of Population in the United States

| Date. | Position of Center of Population.            | Westward<br>Movement,<br>Miles. |
|-------|----------------------------------------------|---------------------------------|
| 1790  | 23 miles E. of Baltimore, Md.....            | ...                             |
| 1800  | 18 miles W. of Baltimore, Md.....            | 40.6                            |
| 1810  | 40 miles N. W. by W. of Washington, D. C.... | 36.9                            |
| 1820  | 60 miles N. of Woodstock, Va.....            | 50.5                            |
| 1830  | 19 miles W. S. W. of Moorefield, W. Va.....  | 40.4                            |
| 1840  | 16 miles S. of Clarksburg, W. Va.....        | 55.0                            |
| 1850  | 23 miles S. E. of Parkersburg, W. Va.....    | 54.8                            |
| 1860  | 20 miles S. of Chillicothe, O.....           | 80.6                            |
| 1870  | 48 miles E. by N. of Cincinnati, O.....      | 44.1                            |
| 1880  | 8 miles W. by S. of Cincinnati, O.....       | 58.1                            |
| 1890  | 20 miles E. of Columbus, Ind.....            | 48.6                            |
| 1900  | 7 miles S. E. of Columbus, Ind.....          | 14.6                            |
| 1910  | Bloomington, Ind.....                        | 39.0                            |

Westward movement in 120 years.....563.2

### Alsace-Lorraine

Alsace-Lorraine is roughly the territory bounded by the Rhine on the east, the Vosges Mountains on the west, Luxemburg on the north, and Switzerland on the south, says the official "War Cyclopedia." The soil is fertile and Lorraine is rich in excellent iron ore. The total area is 5,604 square miles and the population in 1910 was 1,874,014. Both Alsace and Lorraine originally lay within the Holy Roman Empire, but the former was acquired by France in Louis XIV's time, and the latter during the reign of Louis XV. After the Franco-Prussian War Germany took the provinces as a part of the price of peace, despite the protest of the inhabitants. They were at once erected into an imperial territory (*Reichsland*), directly subject to the German Emperor and the Federal Council. The so-called constitution of 1911 did not improve the strained relations between the provinces and the Government, which throughout was unable to reconcile a large portion of the inhabitants or to prevent them from showing their attachment to France on every occasion. Germanizing of the population was only partially successful despite the bringing in of German settlers and the adoption of such restrictive measures as that of limiting instruction in the French language in the public schools to one hour a week.

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### A Famous Phrase

Patrick Henry, in March, 1775, delivered a speech in the Virginia Convention in favor of a resolution "that the colony be immediately put in a state of defense." In concluding his address, the impassioned son of Hanover County said: "Is life so dear, or peace so sweet, as to be purchased at the price of chains and slavery? Forbid it, Almighty God! I know not what course others may take; but as for me, give me liberty, or give me death!"

**NOTED WORLD-WAR PERSONAGES****Marshal Ferdinand Foch**

Marshal Foch was 67 years old when, in March, 1918, he was made supreme commander of the allied forces in the World War. He first became known at the battle of the Marne, September, 1914, when he led the 7th French Army Corps. He was assigned by Gen. Joffre to oppose the victoriously advancing German line at a point south of Chalons, almost midway between Verdun and Paris. His corps represented the French center. The Germans struck at it desperately on Sept. 7 and drove the French south, inflicting heavy losses. Foch rallied his forces, and on Sept. 9, by a brilliant piece of strategy, assumed an unexpected offensive, driving his army clear through the German line. Later Foch's army, with the British, fought the tremendous battle of Ypres.

**Gen. John J. Pershing**

John Joseph Pershing was born at Laclede, Mo., in 1860, and had a great deal of military experience before he went to France. Immediately after graduating from West Point, in 1886, he was sent to New Mexico and Arizona to fight in the Apache campaign, remaining in active Indian service till the Sioux campaign (1891) practically ended Indian warfare. In 1898 he commanded the Tenth Cavalry at Santiago de Cuba. From 1899 to 1903 he served in the Philippines. As military attache in Tokio, 1905-06, he was with Kuroki's army in Manchuria during the Russo-Japanese war. In 1906 he returned to the Philippines as governor of Mindanao and subdued the rebellious Moros. In 1915 he commanded the Presidio in California, where his wife and three daughters were burned to death. In 1916 he commanded the expeditionary force that penetrated into Mexico to end Villa's power for disorder. He was made commander of the American Expeditionary Forces in 1917.



### **David Lloyd George**

The great British Premier in the World War and one of the most commanding figures of the Peace Conference, is a Welchman, born in 1863. He entered Parliament in 1890. He drew public attention by his vigorous opposition to the Boer War, which he denounced in public meetings at no little personal risk. Nevertheless he entered the Liberal Cabinet of 1905, and in 1908 became Chancellor of the Exchequer. His first budget proposed a heavy tax on unoccupied land and was forced through the House of Lords only by the threat of the creation of new peers. He later championed the cause of social reforms, being the chief advocate of measures such as workingmen's insurance. Although an advocate of better relations with Germany up to 1914, after the outbreak of war he stood for a vigorous prosecution of hostilities. In May, 1915, he was given the difficult task of directing the munitions production, in which labor difficulties had arisen. For this task a new department, the Ministry of Munitions, was created. As Minister of Munitions Lloyd George was a great success, and when Asquith resigned in December, 1916, he became Premier.

### **Earl Kitchener**

Earl Kitchener of Khartum, born in 1850, was England's greatest figure in the war in its first years. His principal services to his country prior to the outbreak of hostilities with the German Empire were performed in Egypt and South Africa. His reconquest of the Sudan caused him to be raised to the peerage as Baron Kitchener of Khartum, a name chosen in recognition of his services in leading the expedition up the Nile to that place; he also received the thanks of Parliament and a money grant of £30,000. Lord Kitchener played a distinguished part in the South African War, being commander in chief in 1900-1902; subsequently for some years he commanded in India. He became a viscount in 1902 and an earl in 1914. His military rank had become lieutenant general in

1899, general in 1902, and field marshal in 1909. In 1914 the nation turned to Earl Kitchener with one accord as its greatest and most competent military leader. He became Secretary of State for War. He foresaw the difficult character and the duration of the conflict, and successfully called into being the formidable forces in the field long known as "Kitchener's army." He went down at sea on H. M. S. *Hampshire* when that vessel was destroyed off the Orkney Islands by a German mine or a torpedo on June 5, 1916, while bound for Archangel on a special mission to Russia.

### **Nikolai Lenine**

The chief leader of the Russian Bolsheviki; his real name is Vladmir Utulyanov. Born about 1870. In the early nineties Lenine, already well known as the author of several works of an extreme tendency on economic subjects, became a leader of the radical Social Democrats of Russia. Elected to the second Duma after the revolution of 1905, he was soon exiled. At the outbreak of the World War he was in Cracow (Austrian Poland), where he was soon interned as an enemy alien but was released and allowed to join the colony of radical Russians in Switzerland. In April, 1917, through the collusion of the German Government, he reached Petrograd, where he began to preach immediate peace and general confiscation of property.

### **Marshal Joffre**

Gen. Joseph Jacques Cesaire Joffre, born in 1852, was commander in chief of the French armies during the earlier stages of the Great War. He entered the army as a second lieutenant during the Franco-Prussian War of 1870-71, commanding a battery in the siege of Paris. He later served with distinction in the French colonies in Asia and Africa. Appointed chief of the general staff of the French army in 1911, he assumed active command at the outbreak of the war, and his fame became world-wide when he stopped the German advance upon Paris at

the battle of the Marne. On his visit to America as the head of the French mission he aroused popular sympathies as no other Frenchman has done since Lafayette's last visit in 1825. He was succeeded in active supreme command at the end of 1916, after two and a half years of the most arduous responsibility, by Gen. Nivelle, whose reputation was made in the defense of Verdun, but who was soon superseded by Gen. Petain. Gen. Joffre was made marshal of France, and became the chief military advisor.

### **Field Marshal Von Hindenburg**

Field Marshal Paul von Hindenburg, born 1847. Chief of the general staff of the German Army from 1916 to the signing of the armistice. Before the war he was noted chiefly for his extensive knowledge of the Mazurian Lakes in East Prussia. When the Russians invaded that province in August, 1914, Hindenburg was called from retirement, and by brilliant strategy destroyed their army at Tannenberg. That victory made him the idol of Germany and led the Kaiser to create him field marshal. The following summer he drove the Russians out of Poland. After the failure before Verdun and on the Somme, which reflected little credit on Gen. von Falkenhayn, that general was deposed as chief of the general staff and Hindenburg put in his place. It was often asserted that Hindenburg is not so great a general as his assistant, Ludendorff, the first quartermaster general.

### **Sir Douglas Haig**

Commander in chief of the British forces in France and Flanders, to which position he succeeded when Sir John French was recalled for other duties in 1915. He was employed for many years in the cavalry arm of the British service, reaching the rank of major general in 1904, lieutenant general in 1910, and general in 1914. He was at Khartum with Kitchener, fought for three years in the South African war, and saw extended service in India before coming to his present high command in December, 1915. He

was created field marshal after the battle of the Somme in 1916.

### **Field Marshal French**

Sir John, now Viscount French, commanded with skill the British expeditionary force in Belgium and France from the outbreak of the war until he was replaced in 1915 by Sir Douglas Haig. He was chief of the imperial general staff in 1912-14. He commanded the cavalry division in the South African War, when his name came to be widely known. His title is Viscount French of Ypres in testimony of his services in that battle, by which the Germans were frustrated in their design to reach Calais.

### **Georges Clemenceau**

A French statesman of strong personality, born in 1841. For several years he was a resident of America as a school teacher in Connecticut, but returned to France in 1869. He entered political life after the war of 1870-71. He has in the past written on American affairs for the French press. Owing to his great power as a debater, he has always been one of the most influential members of the Chamber of Deputies. He has probably made and unmade more ministries than any other Frenchman of recent history. He was the editor of *L'Homme Libre*, an influential French newspaper, which for a time he styled *L'Homme Enchaîné* because of censorship difficulties. He became Prime Minister on November 17, 1917, with a program calling for a vigorous prosecution of the war, a rigid suppression of treasonable intrigue, and a more liberal policy as to political censorship of the press. He was one of the chief figures at the Peace Conference of 1919.

### **Kaiser Wilhelm**

William II, former King of Prussia, and German Emperor from June 15, 1888, to his abdication in 1918, was born in 1859. His grandfather, William I, achieved German unity, established the German Empire, and greatly influenced the ideals of his grandson. William II's mother was



the eldest daughter of Queen Victoria of England. At his accession he declared to the army: "So we are bound together—I and the army—so we are born for one another, and so we shall hold together indissolubly, whether, as God wills it, we are to have peace or storm." After forcing Bismarck's resignation on March 18, 1890, William II telegraphed to the Grand Duke of Weimar: "To me has fallen the post of officer of the watch upon the ship of state. We shall keep the old course; and now full steam ahead!" A few weeks later at Bremen he said: "It is a tradition in our house that we regard ourselves as chosen by God to govern and guide the people over whom we are appointed to rule, so that we may promote their welfare and further their material and spiritual interests. . . . We Germans shall succeed by vigorous striving toward the goal in accordance with the good maxim, 'We Germans fear God, and nothing else in the world.'" These three utterances summarize well his reign from 1890 onward: A devotion to the army and navy; a restless striving to push forward in every field of activity, quite unaware that in so doing he could not possibly "keep to the old course" of caution which Bismarck had steered; and an unlimited confidence in himself as the chosen of God. Endowed with an active mind and extraordinary energy, he sought to lead the way in political, social, and economic matters, to furnish the inspiration in literature, art, and science, and to develop the intensely modern materialistic Germany, with its overwhelming discipline, its progressive efficiency, and its expanding power beyond the seas.

### **The Last of the Czars**

Nicholas II, the last Czar of Russia, was born in 1868. He ascended the throne October 20, 1894, and married Alexandria, Princess of Hesse, the same year. Nicholas inaugurated his reign by a rigorous repression of all liberal movements and then embarked on a policy of adventure in the Far East, which ended in the war with Japan

(1904-5) and the defeat of Russia. During the war a revolutionary movement manifested itself at home, which, culminating in the general strike of October, 1905, forced the Czar to grant a constitution. But Nicholas distrusted the liberals and gave the bureaucracy a free hand in crushing the revolution. On the outbreak of the European War the Czar proclaimed the solidarity of throne and people, thereby securing a considerable measure of popularity; but once again he relied too exclusively on the bureaucracy, with disastrous results, for these reactionaries soon lost interest in the war, and when the Czar refused to displace them he was compelled by the revolutionaries to abdicate, March 15, 1917. Nicholas II was undoubtedly patriotic; at times he was swayed by noble humanitarian sentiments, which notably led to the calling of the first Hague conference, but he was weak willed, vacillating, unreliable, superstitious.

#### **King Albert of Belgium**

Albert I, King of the Belgians, born 1875, succeeded to the throne December 23, 1909, in succession to his uncle, Leopold II. Becoming heir apparent at the age of 17 by the death of his elder brother, he passed through the educational steps regularly marked out for Belgian royalty—the military school, extensive travels, and participation as member of the Senate in national politics. At his accession he was regarded with general favor as an earnest student, devoted to the welfare of his country. On the question of foreign affairs he was approached by the Kaiser in November, 1913, at which time William II seems to have exerted enormous but unavailing pressure upon him in the hope of persuading him to permit the eventual violation of Belgian neutrality by Germany. It was largely because of his determination that Belgium must abide by her promises to maintain—if necessary, by force—her absolute neutrality that the country played the heroic part known to the world in the summer of 1914.

## **Constitution of the League of Nations**

Following is the Constitution of the League of Nations as read to the Peace Conference in Paris by President Wilson, Feb. 14, 1919:

### **PREAMBLE.**

In order to promote international co-operation and to secure international peace and security by the acceptance of obligations not to resort to war, by the prescription of open, just and honorable relations between nations, by the firm establishment of the understandings of international law as the actual rule of conduct among governments, and by the maintenance of justice and a scrupulous respect for all treaty obligations in the dealings of organized people with one another, the powers signatory to this covenant adopt this constitution of the League of Nations:

### **ARTICLE I.—THE BASIS.**

The action of the high contracting parties under the terms of this covenant shall be effected through the instrumentality of a meeting of a body of delegates representing the high contracting parties, of meetings at more frequent intervals of an executive council, and of a permanent international secretariat to be established at the seat of the league.

### **ARTICLE II.—MEETINGS.**

Meetings of the body of delegates shall be held at stated intervals and from time to time as occasion may require for the purpose of dealing with matters within the sphere of action of the league. Meetings of the body of delegates shall be held at the seat of the league or at such other places as may be found convenient and shall consist of representatives of the high contracting parties. Each of the high contracting parties shall have one vote, but may have not more than three representatives.

### **ARTICLE III.—EXECUTIVE COUNCIL.**

The Executive Council shall consist of representatives of the United States of America, the British Empire, France, Italy, and Japan, to-

gether with representatives of four other states, members of the league. The selection of these four states shall be made by the body of delegates on such principles and in such manner as they think fit. Pending the appointment of these representatives of the other states, representatives of (blank left for names) shall be members of the Executive Council.

Meetings of the Council shall be held from time to time as occasion may require and at least once a year at whatever place may be decided on, or failing any such decision, at the seat of the League, and any matter within the sphere of action of the League or affecting the peace of the world may be dealt with at such meetings.

Invitations shall be sent to any power to attend a meeting of the Council, at which such matters directly affecting its interests are to be discussed and no decision taken at any meeting will be binding on such powers unless so invited.

#### ARTICLE IV.—PROCEDURE.

All matters of procedure at meetings of the body of delegates or the Executive Council, including the appointment of committees to investigate particular matters, shall be regulated by the body of delegates or the Executive Council and may be decided by a majority of the states represented at the meeting.

The first meeting of the body of delegates and the Executive Council shall be summoned by the President of the United States of America.

#### ARTICLE V.—SECRETARIAT.

The permanent secretariat of the League shall be established at ———, which shall constitute the seat of the League. The secretariat shall comprise such secretaries and staff as may be required, under the general direction and control of a secretary-general of the League, who shall be chosen by the Executive Council; the secretariat shall be appointed by the secretary-general subject to confirmation by the Executive Council.



The secretary-general shall act in that capacity at all meetings of the body of delegates or of the Executive Council.

The expense of the secretariat shall be borne by the states members of the League in accordance with the apportionment of the expenses of the Universal Postal Union.

#### ARTICLE VI.—IMMUNITY.

Representatives of the high contracting parties and officials of the League when engaged in the business of the League shall enjoy diplomatic privileges and immunities and the buildings occupied by the League or its officials or by representatives attending its meetings shall enjoy benefits of extra-territoriality.

#### ARTICLE VII.—ADMISSION.

Admission to the League of States not signatories to the covenant and not named in the protocol hereto as states to be invited to adhere to the covenant, requires the assent of not less than two-thirds of the states represented in the body of delegates, and shall be limited to fully self-governing countries, including dominions and colonies.

No state shall be admitted to the League unless it is able to give effective guarantees of its sincere intention to observe its international obligations, and unless it shall conform to such principles as may be prescribed by the League in regard to its naval and military forces and armaments.

#### ARTICLE VIII.—ARMAMENTS.

The high contracting parties recognize the principle that the maintenance of peace will require the reduction of national armaments to the lowest point consistent with national safety and the enforcement by common action of international obligations, having special regard to the geographical situation and circumstances of each state; and the Executive Council shall formulate plans for effecting such reduction. The Executive Council shall also determine for the consideration and action of the several governments

what military equipment and armament is fair and reasonable in proportion to the scale of forces laid down in the program of disarmament; and these limits, when adopted, shall not be exceeded without the permission of the executive council.

The high contracting parties agree that the manufacture by private enterprise of munitions and implements of war lends itself to grave objections, and direct the Executive Council to advise how the evil effects attendant upon such manufacture can be prevented, due regard being had to the necessities of those countries which are not able to manufacture for themselves the munitions and implements of war necessary for their safety.

The high contracting parties undertake in no way to conceal from each other the condition of such of their industries as are capable of being adapted to war-like purposes or the scale of their armaments, and agree that there shall be full and frank interchange of information as to their military and naval programs.

#### ARTICLE IX.—ARMS CONTROL.

A permanent commission shall be constituted to advise the League on the execution of the provisions of Article VIII and on military and naval questions generally.

#### ARTICLE X.—TERRITORIAL INTEGRITY.

The high contracting parties shall undertake to respect and preserve as against external aggression the territorial integrity and existing political independence of all states members of the League. In case of any such aggression or in case of any threat or danger of such aggression the Executive Council shall advise upon the means by which this obligation shall be fulfilled.

#### ARTICLE XI.—THREAT OF WAR.

Any war or threat of war, whether immediately affecting any of the high contracting parties or not, is hereby declared a matter of concern to the League and the high contracting parties reserve the right to take any action that may

be deemed wise and effectual to safeguard the peace of nations.

It is hereby also declared and agreed to be the friendly right of each of the high contracting parties to draw the attention of the body of delegates or of the Executive Council to any circumstance affecting international intercourse which threatens to disturb international peace or the good understanding between nations upon which peace depends.

#### ARTICLE XII.—ARBITRATION.

The high contracting parties agree that should disputes arise between them which cannot be adjusted by the ordinary processes of diplomacy they will in no case resort to war without previously submitting the questions and matters involved either to arbitration or to inquiry by the Executive Council, and until three months after the award by the arbitrators or a recommendation by the Executive Council, and that they will not even then resort to war as against a member of the League which complies with the award of the arbitrators, or the recommendation of the Executive Council.

In any case under this article the award of the arbitrators shall be made within a reasonable time, and the recommendation of the Executive Council shall be made within six months after the submission of the dispute.

#### ARTICLE XIII.—ABIDE BY AWARD.

The high contracting parties agree that whenever any dispute or difficulty shall arise between them which they recognize to be suitable for submission to arbitration, and which cannot be satisfactorily settled by diplomacy, they will submit the whole matter to arbitration. For this purpose the court of arbitration to which the case is referred shall be the court agreed on by the parties or stipulated in any convention existing between them. The high contracting parties agree that they will carry out in full good faith any award that may be rendered. In the event of any failure to carry out the award the Execu-

tive Council shall propose what steps can best be taken to give effect thereto.

ARTICLE XIV.—PERMANENT COURT.

The Executive Council shall formulate plans for the establishment of a permanent court of international justice, and this court shall, when established, be competent to hear and determine any matter which the parties recognize as suitable for submission to it for arbitration under the foregoing article.

ARTICLE XV.—SETTLEMENT.

If there should arise between states members of the League any dispute likely to lead to rupture, which is not submitted to arbitration as above, the high contracting parties agree that they will refer the matter to the Executive Council; either party to the dispute may give notice of the existence of the dispute to the Secretary General, who will make all necessary arrangements for a full investigation and consideration thereof. For this purpose the parties agree to communicate to the Secretary General, as promptly as possible, statements of their case with all the relevant facts and papers, and the Executive Council may forthwith direct the publication thereof. Where the efforts of the Council lead to the settlement of the dispute a statement shall be published indicating the nature of the dispute and the terms of settlement, together with such explanations as may be appropriate. If the dispute has not been settled, a report by the Council shall be published, setting forth with all necessary facts and explanations the recommendation which the Council thinks just and proper for the settlement of the dispute. If the report is unanimously agreed to by the members of the Council other than the parties to the dispute, the high contracting parties agree that they will not go to war with any party which complies with the recommendations and that if any party shall refuse so to comply the Council shall propose measures necessary to give effect to the recommendations. If no such unanimous report can be made, it shall be the duty of the majority



and the privilege of the minority to issue statements indicating what they believe to be the facts and containing the reasons which they consider to be just and proper.

The Executive Council may in any case under this article refer the dispute to the body of the delegates. The dispute shall be so referred at the request of either party to the dispute, provided that such request must be made within fourteen days after the submission of the dispute. In a case referred to the body of delegates all the provisions of this article and of Article XII relating to the action and powers of the Executive Council shall apply to the action and powers of the body of delegates.

#### ARTICLE XVI.—BOYCOTT.

Should any of the high contracting parties break or disregard its covenants under Article XII, it shall thereby ipso facto be deemed to have committed an act of war against all the other members of the League, which hereby undertakes immediately to subject it to the severance of all trade or financial relations, the prohibition of all intercourse between their nationals and the nationals of the covenant-breaking state, and the prevention of all financial, commercial, or personal intercourse between the nationals of the covenant-breaking state and the nationals of any other state, whether a member of the League or not.

It shall be the duty of the Executive Council in such case to recommend what effective military or naval force the members of the League shall severally contribute to the armed forces to be used to protect the covenants of the League. The high contracting parties agree, further, that they will mutually support one another in the financial and economic measures which may be taken under this article, in order to minimize the loss and inconvenience resulting from the above measures, and that they will mutually support one another in resisting all special measures aimed at one of their number by the covenant-

breaking state, and that they will afford passage through their territory to the forces of any of the high contracting parties who are co-operating to protect the covenants of the League.

#### ARTICLE XVII.—NON-MEMBERS.

In the event of disputes between one state member of the League and another state which is not a member of the League, or between states not members of the League, the high contracting parties agree that the state or states not members of the League shall be invited to accept the obligations of membership in the League for the purposes of such dispute, upon such conditions as the Executive Council may deem just, and upon acceptance of any such invitation the above provisions shall be applied with such modifications as may be deemed necessary by the League.

Upon such invitation being given the Executive Council shall immediately institute an inquiry into the circumstances and merits of the dispute, and recommend such action as may seem best and most effectual in the circumstances.

In the event of a power so invited refusing to accept the obligations of membership in the League for the purposes of the dispute, which in the case of a state member of the League would constitute a breach of Article XII, the provisions of Article XVI shall be applicable as against the state taking such action.

If both parties to the dispute when so invited refuse to accept the obligations of membership in the League for the purposes of such dispute, the Executive Council may take such action and make such recommendations as will prevent hostilities and will result in the settlement of the dispute.

#### ARTICLE XVIII.—TRADE IN ARMS.

The high contracting parties agree that the League shall be intrusted with general supervision of the trade in arms and ammunition with the countries in which the control of this traffic is necessary in the common interest.

## ARTICLE XIX.—MANDATORIES.

To those colonies and territories which as a consequence of the late war have ceased to be under the sovereignty of the states which formerly governed them and which are inhabited by peoples not yet able to stand by themselves under the strenuous conditions of the modern world, there should be applied the principle that the well being and development of such peoples form a sacred trust of civilization, and that securities for the performance of this trust should be embodied in the constitution of the League.

The best method of giving practical effect to this principle is that the tutelage of such peoples should be intrusted to advanced nations who by reason of their resources, their experience, or their geographical position, can best undertake this responsibility, and that this tutelage should be exercised by them as mandatories on behalf of the League.

The character of the mandate must differ according to the stage of the development of the people, the geographical situation of the territory, its economic conditions, and other similar circumstances.

Certain communities formerly belonging to the Turkish empire have reached a stage of development in which their existence as independent nations can be provisionally recognized subject to the rendering of administrative advice and assistance by a mandatory power until such time as they are able to stand alone. The wishes of these communities must be a principal consideration in the selection of the mandatory power.

Other peoples, especially those of central Africa, are at such a stage that the mandatory must be responsible for the administration of the territory subject to conditions which will guarantee freedom of conscience or religion, subject only to the maintenance of public order and morals, the prohibition of abuses such as the slave trade, the arms traffic and the liquor traf-

fic, and the prevention of the establishment of fortifications or military and naval bases, and of military training of the natives for other than police purposes and the defense of territory, and will also secure equal opportunities for the trade and commerce of other members of the League.

There are territories, such as southwest Africa and certain of the south Pacific isles, which, owing to the sparseness of their population, or their small size, or their remoteness from the centers of civilization or their geographical contiguity to the mandatory state, and other circumstances, can be best administered under the laws of the mandatory state as integral portions thereof, subject to the safeguards above mentioned, in the interests of the indigenous population.

In every case of mandate, the mandatory state shall render to the League an annual report in reference to the territory committed to its charge.

The degree of authority, control, or administration to be exercised by the mandatory state shall, if not previously agreed upon by the high contracting parties in each case, be explicitly defined by the Executive Council in a special act or charter.

The high contracting parties further agree to establish at the seat of the League a mandatory commission to receive and examine the annual reports of the mandatory powers and to assist the League in ensuring the observance of the terms of all mandates.

#### ARTICLE XX.—LABOR.

The high contracting parties will endeavor to secure and maintain fair and humane conditions of labor for men, women, and children both in their own countries and in all countries to which their commercial and industrial relations extend, and to that end agree to establish as part of the organization of the League a permanent bureau of labor.

#### ARTICLE XXI.—TRANSIT.

The high contracting parties agree that provision shall be made through the instrumentality



of the League to secure and maintain freedom of transit and equitable treatment for the commerce of all states members of the League, having in mind, among other things, special arrangements with regard to the necessities of the regions devastated during the war of 1914-1918.

ARTICLE XXII.—TREATY BUREAU.

The high contracting parties agree to place under the control of the League all international bureaus already established by general treaties if the parties to such treaties consent. Furthermore, they agree that all such international bureaus to be constituted in future shall be placed under control of the League.

ARTICLE XXIII.—PUBLICATION.

The high contracting parties agree that every treaty or international engagement entered into hereafter by any state member of the League shall be forthwith registered with the Secretary General, and as soon as possible published by him, and that no such treaty or international engagement shall be binding until so registered.

ARTICLE XXIV.—ABROGATION.

It shall be the right of the body of delegates from time to time to advise the reconsideration by states members of the League of treaties which have become inapplicable, and of international conditions of which the continuance may endanger the peace of the world.

ARTICLE XXV.—OLD TREATIES NULL.

The high contracting parties severally agree that the present covenant is accepted as abrogating all obligations *inter se* which are inconsistent with the terms thereof, and solemnly engage that they will not hereafter enter into any engagements inconsistent with the terms thereof. In case any of the powers signatory hereto or subsequently admitted to the League shall, before becoming a party to this covenant, have undertaken any obligations which are inconsistent with the terms of this covenant, it shall be the duty of such power to take immediate steps to procure its release from such obligations.

## ARTICLE XXVI.—AMENDMENTS.

Amendments to this covenant will take effect when ratified by the states whose representatives compose the Executive Council and by three-fourths of the states whose representatives compose the body of delegates.

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**Cause of the World War**

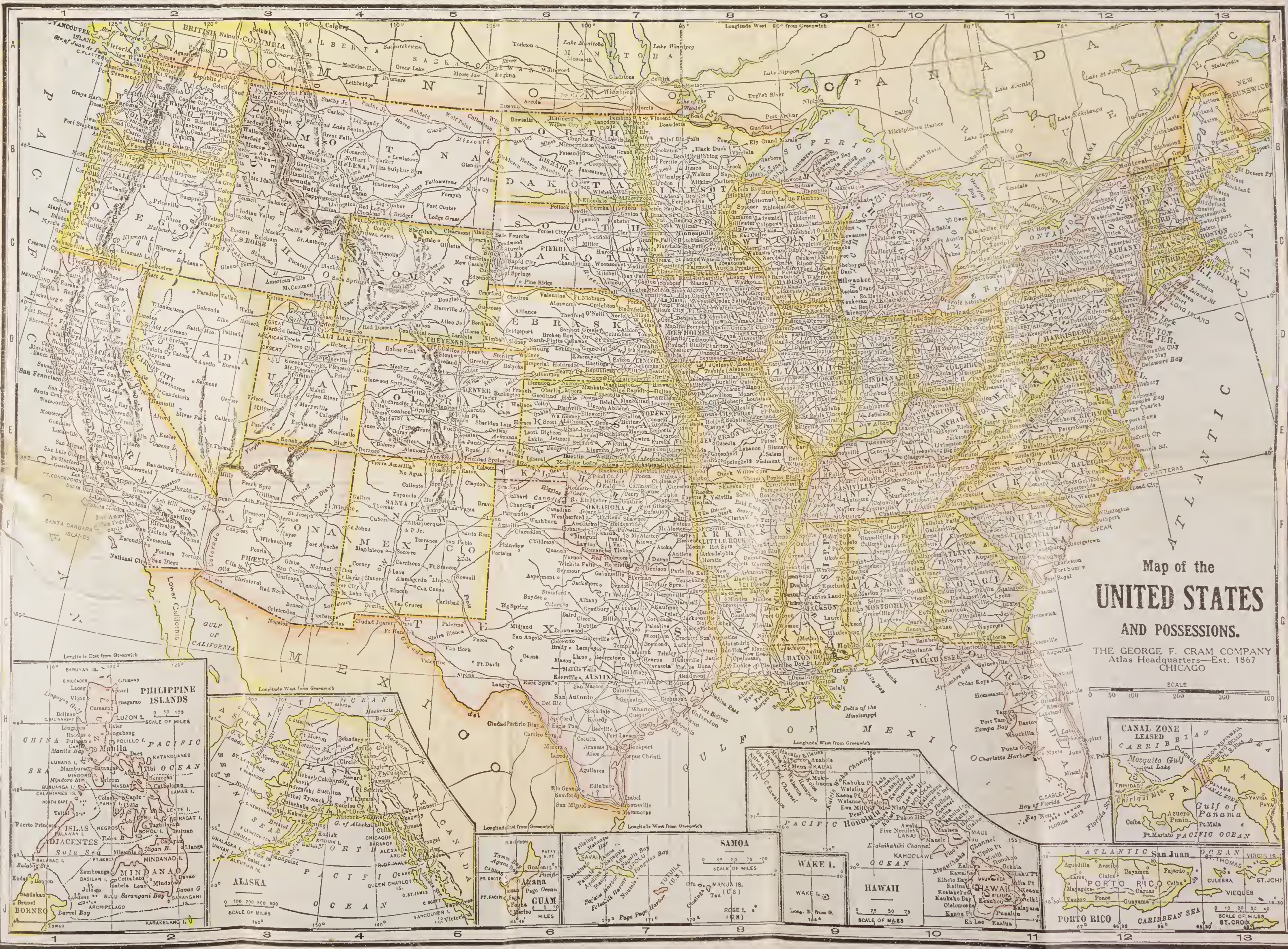
Sarajevo, the capital of Bosnia, was the scene of the assassination of the Archduke Francis Ferdinand and his wife on June 28, 1914. The assassin was a Bosnian, who was a member of the Narodna Odbrana, a Serbian secret society which aimed to detach Bosnia and Herzegovina, peopled as they are by races of Serbian stock, from Austria-Hungary and annex them to Serbia. The Austrian Government alleged that he secured his arms from the Serbian State arsenal and that the Serbian Government was privy to the deed. The murder of the heir to the throne furnished the Austro-Hungarian Government an excuse to square its account with Serbia, which in the eyes of the German, Magyar, and military elements of the monarchy was long overdue. Consequently, an ultimatum of the most humiliating character was addressed to Serbia on July 23, and although Serbia accepted it almost *in toto*, Austria-Hungary declared war on July 28. Out of this the general European conflagration developed.

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**Profiteering**

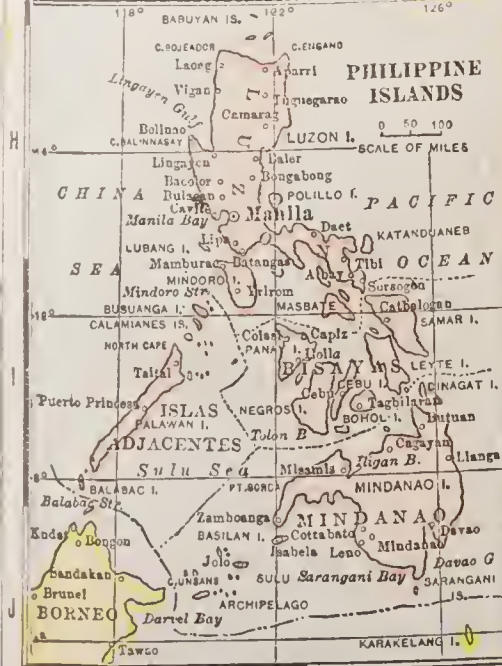
The taking of exorbitant profits in war time, the taking advantage of your neighbors' and your country's necessities that you may make yourself rich. There were such individuals at the time of the American Revolution, and George Washington wrote of them as follows "I would to God, that one of the most atrocious of each State was hung in gibbets upon a gallows five times as high as the one prepared for Haman. No punishment, in my opinion, is too great for the man who can build his greatness upon his country's ruin."



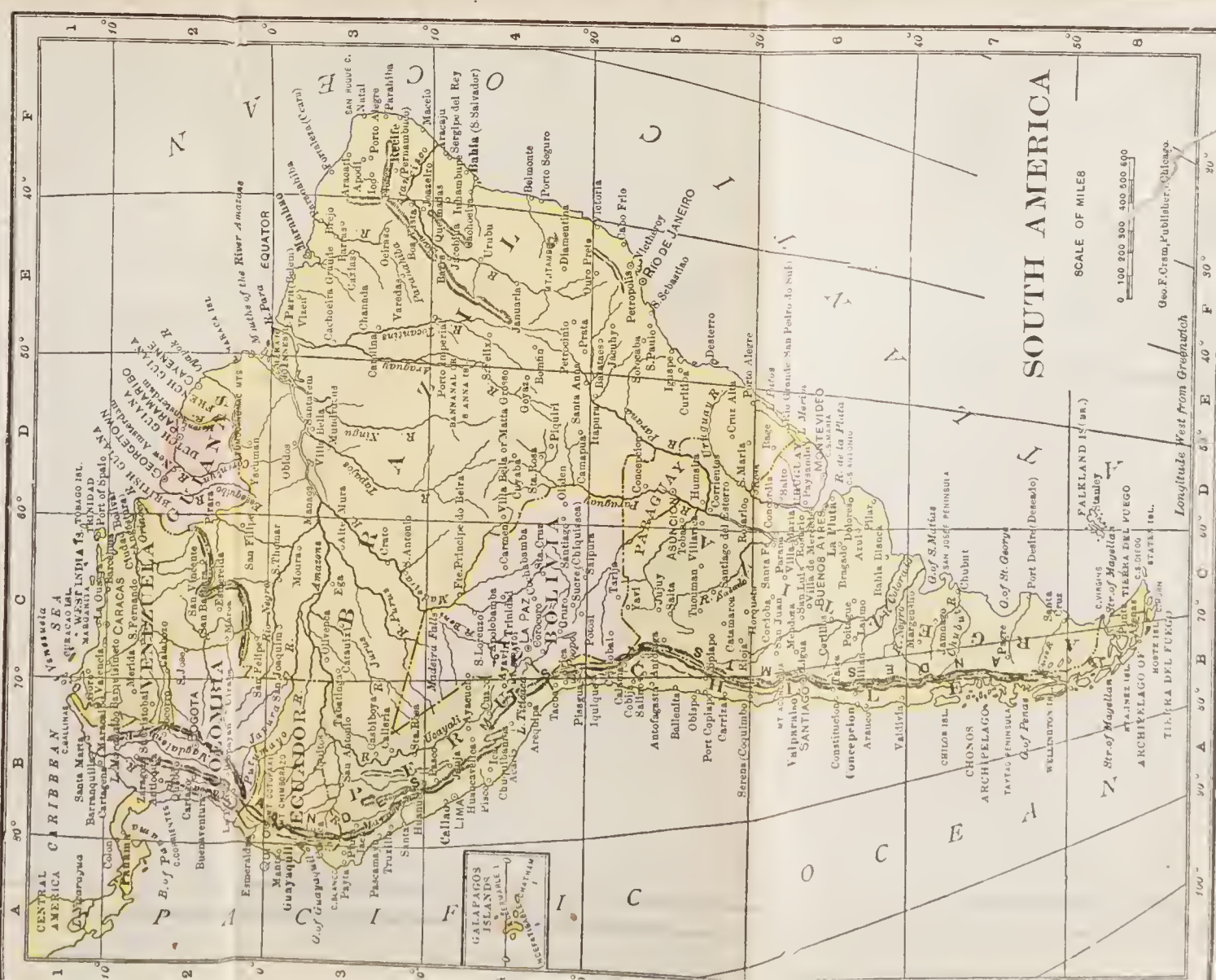
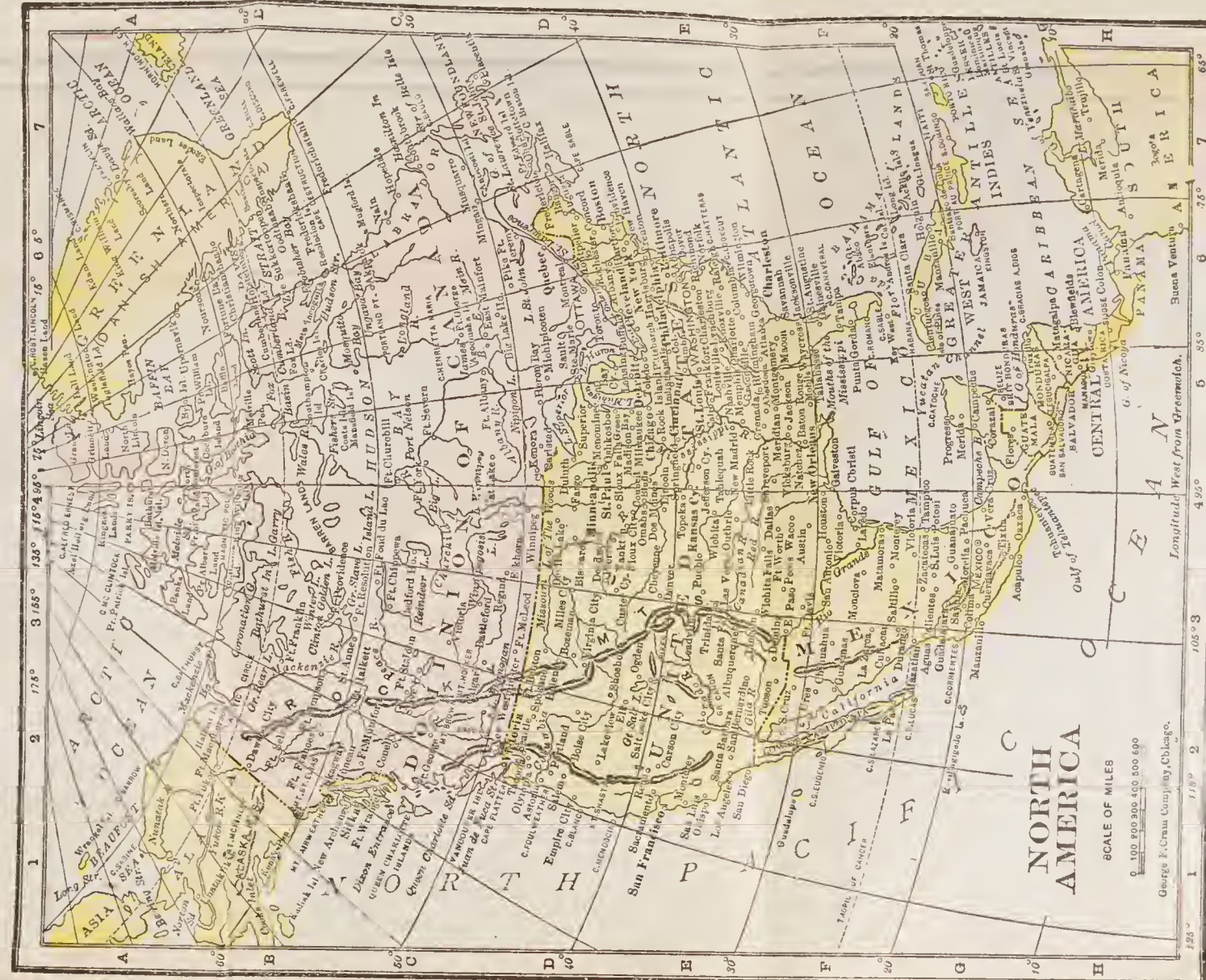


Map of the  
**UNITED STATES**  
AND POSSESSIONS.

THE GEORGE F. CRAM COMPANY  
Atlas Headquarters—Est. 1867  
CHICAGO









# Atlas of the World.

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## THE NEW EUROPE

The defeat of the Central Powers in the World War and the disintegration of Russia and Austria-Hungary made startling changes in the map of Europe. One result is that Poland, Finland, Czecho-Slovakia and Jugo-Slavia are definite new arrivals in the family of nations, the chief fruit of President Wilson's point of self-determination, with Lithuania, Letvia, Esthonia and Ukrainia still knocking at the door. Of the great powers Italy and France alone gained European accretions of territory, Great Britain taking as her share an even richer reward in the German colonies. Roumania, by her new acquisitions, approaches the standing of a major power. Alsace and Lorraine were the chief prizes won by France. She also acquired the Saar valley of Germany, with its rich coal mines. Italy won her "unredeemed territory"—the Trentino, Istria and Austrian Venetia—so that the new Italian boundary follows the crest of the Alps for their entire length. It also includes Tarvis on the Austrian side, desirable for strategic reasons. Italy also gets Avlona, called the Gibraltar of the Adriatic, and a protectorate over northern Albania. The secret treaty of London also gave Italy a claim to the islands on the eastern shore of the Adriatic. Belgium received only Malmedy as new territory. Serbia's territory has been increased by three times, now embracing Montenegro and the Slav populations of the former Austro-Hungarian empire. Greece looks to the west coast of Turkey for most of its accretions.

Great Britain gained as the result of the war more territory than all the rest of the allies together. It now dominates the most populous and richest regions of Africa and dictates the affairs of Persia and the whole Arabian peninsula. At the same time it has extended its power over the South Pacific and has studded its main

routes to India, Australia and the China trade with frequent havens for its ships, completely monopolizing the posts of control of the Suez route. It is now possible to go from Cape Town to Calcutta by land without leaving British soil. Great Britain never had its trade routes so guarded as now. Its supremacy of the sea was never so firmly established.

While Great Britain holds the south of Asia, Japan holds the east. The Japanese now have a firm grip on the positions in the far east. With Shantung and Port Arthur they have a grasp on the sea approaches to northern China. By holding Corea they control the approaches to Siberia. From Formosa they menace southern China.

### Great Britain

Area, 11,498,825 square miles; population, 1911, 421,178,965. Government, a limited hereditary monarchy; the king is represented by a prime minister and his cabinet, and the legislative authority is vested in Parliament, which consists of an hereditary House of Lords and the House of Commons. Imports, 1918, \$9,830,325,000; exports, \$7,045,825,000.

### THE UNITED KINGDOM

This part of the British empire consists strictly of England, Wales, Scotland, Ireland, the Isle of Man and the channel islands. Total area, 121,391 square miles; population, 1911, 45,369,090, of which England had 34,045,290; Wales, 2,025,202; Scotland, 4,759,445; Ireland, 4,390,219; Isle of Man, 52,034; channel islands, 96,000. The total imports of the United Kingdom in 1918 were \$6,596,695,000; exports, \$2,647,145,000. The total exports of the United Kingdom to the U. S. in 1919 were \$157,107,578; imports from U. S., \$2,147,412,241.

### INDIA

Government—A governor-general appointed by the crown. The legislative authority is vested in a council of 68 members. The total area of British India is 1,773,088 square miles; population, census 1911, 315,132,527. Imports, 1918,

\$547,850,000; exports, \$816,315,000. Imports from the U. S., 1919, \$50,501,740; exports, \$125,-471,468.

#### DOMINION OF CANADA

The governor-general of the Dominion is appointed by the crown. The Canadian Parliament consists of 87 life senators and a house of commons of 221 members. Area, 3,729,665 square miles, of which 3,603,910 is land. The total population according to the census of 1911 was 7,206,-643, divided among the provinces as follows: Alberta, 374,663; British Columbia, 392,480; Manitoba, 455,614; New Brunswick, 351,889; Nova Scotia, 492,338; Ontario, 2,523,274; Prince Edward Island, 93,728; Quebec, 2,003,232; Saskatchewan, 492,432; Yukon, 8,512; Northwest Territories, 18,481. Exports, 1918, \$1,586,169,792; imports, \$962,543,746. Imports from the U. S., 1919, \$813,723,031; exports to U. S., \$468,954,818.

#### NEWFOUNDLAND AND LABRADOR

A British colony administered by a governor, an executive council, a legislative council and an elected house of assembly. Area of Newfoundland, 42,734 square miles; population, 1917, 252,-464. Area of Labrador, 120,000 square miles; population, 4,000. Imports, 1918, \$27,640,000; exports, \$30,990,000. Imports from U. S., 1919, \$14,545,065; exports to U. S., \$6,032,781.

#### COMMONWEALTH OF AUSTRALIA

The six provinces of Australia were authorized by an act passed by the British Parliament July 9, 1900, to form a federal union, and the new commonwealth was proclaimed Jan. 1, 1901, at Sydney. Its first parliament was opened May 9, 1901, by the then Prince of Wales (later George V), acting for his father, King Edward VI. The capital now is at Melbourne. The Federal Parliament is made up of a senate of 36 members, six from each state, and a house of representatives of 75 members. The British crown is represented by a governor-general, with a council of seven ministers. The commonwealth has a total area of 2,974,581 square miles; population, 1911, 4,455,005. Exports, 1918, \$375,195,000; imports,

\$301,815,720. Exports to the U. S. in 1919, \$74,643,990; imports from U. S., \$109,034,686.

#### UNION OF SOUTH AFRICA

By an act of the British Parliament Sept. 29, 1909, the four self-governing colonies of South Africa—Cape of Good Hope, Natal, Transvaal and Orange Free State—were empowered to form a federal government. This was proclaimed May 31, 1910, at Pretoria, the seat of government, and at Cape Town, the seat of the legislature. The crown of Great Britain is represented by a governor-general, who, with an executive council and ten ministers, forms the executive branch of the government. The legislative power is vested in a parliament consisting of a senate and a house of assembly. The senate consists of 40 members, 8 of whom are appointed by the governor-general in council and 32 elected by the four provinces. The assembly consists of 121 members. The term of senators is 10 years; of assemblymen, 5. Both the English and Dutch languages are official. Area in square miles, 473,100; population, 5,973,394. Imports, 1918, \$247,435,840; exports, \$164,746,185. Exports to the U. S. in 1919, \$36,388,174; imports from U. S., \$44,841,871.

#### NEW ZEALAND

Situated 1,200 miles southeast of Australia. Was made a Dominion of the British Empire in 1907. It consists of three principal islands to which are attached a number of other groups, the Chatham Islands, the Aucklands, the Antipodes, etc. Area, 104,751 sq. mi.; population, 802,769, including about 50,000 Maoris. Agriculture is an important industry, as is cattle raising, and mining is carried on extensively. The government consists of a governor-general appointed by the crown and a General Assembly. Chief exports, wool, frozen meat, butter and cheese, gold, hides and leather.

#### The Republic of Austria

At the conclusion of the World War the Austro-Hungarian empire was disrupted by the



breaking away of various states, each declaring itself independent and becoming a republic in form. Austria herself was proclaimed a republic Nov. 12, 1918, and the government was administered by a national assembly. Early in 1919 a national constitutional assembly was elected which adopted the name "Republic of Austria," but up to the present writing the assembly had not chosen a president, the administration being conducted by Dr. Karl Renner and a cabinet chosen by him. Dr. Renner announced in October, 1919, that the republic would be constituted of eight Austrian states, each largely preserving its autonomy. Figures as to area and population cannot be given with certainty, but the area has been roughly estimated at 30,000 square miles and the population at 10,000,000.

### **Belgium**

A constitutional monarchy, the legislative power being vested in the king, senate and chamber of representatives. Of all the European nations engaged in the World War Belgium seems to have made the quickest recovery. It suffered least from post-war strikes, and its factories, owing in part to the rapidity of German restoration after the peace, soon were returning to their pre-war production, although no figures as to total imports and exports since 1913 are as yet available. The trade with the United States in 1919 was: Imports, \$322,940,837; exports, \$647,-869. Total area, 11,373 square miles; population, 1910, 7,423,784.

### **Bulgaria**

A constitutional monarchy, the executive power being vested in a king and a council of ministers, and the legislative power in a sobranje or national assembly. Area, 43,310 square miles; population, 1914, 4,752,997. Capital, Sofia, 102,769. Exports in 1914, \$28,812,300; imports, \$44,586,-800. Exports to the U. S. in 1919, \$78,071; imports from U. S., \$1,281,000. The imports are mainly textiles, and the exports cereals.

### **Czecho-Slovakia**

Czecho-Slovakia, composed principally of Bo-

hemia (Czechy), Moravia, Silesia and Slovakia, announced her independence Oct. 18, 1918, and a national assembly on Nov. 15 of the same year declared the state to be a republic, with Prof. T. G. Masaryk as its first president, who formally assumed his duties on Dec. 31, 1918, in Prague, the capital. Area, approximately, 60,000 square miles; population, 13,000,000.

### **Denmark**

A constitutional hereditary monarchy, the executive power being vested in a king and a cabinet of ten members, the legislative authority in the landsting and folkething. The former, the upper house, has 66 members, twelve of whom are appointed for life, the remainder being elected for terms of eight years. The folkething has a membership of 114, elected for three years. Area, 15,582 square miles; population, 1916, 2,940,979. Capital, Copenhagen, 506,390. Exports, 1916, \$363,580,000; imports, \$377,055,000. Imports from the U. S. in 1919, \$93,167,530; exports, \$2,294,048. Leading articles of export are butter, pork, eggs and lard; of import, textiles, cereals, wood, iron manufactures and coal.

### **Estonia**

A province of the former Russian empire which declared itself an independent republic and elected for its government a constitutional assembly. Its area is 7,289 square miles, with a population of about 1,750,000.

### **Finland**

This former province of Russia declared its independence July 20, 1917, and became a republic Oct. 7 of that year. War between the red guards of the Russian bolsheviki and the white guards under Gen. Mannerheim delayed the organization, but the independence of the republic was preserved and the diet elected Prof. Kaarie Juho Stahlberg the first president on July 25, 1919. Universal suffrage (men and women) prevails, and all members of Parliament are elected by direct vote. Area, 125,689 square miles; population, 1915, 3,300,650. Exports to the U. S. in 1919, \$309,053; imports from the U. S., \$9,509,167.

### France

A republic, the executive power being vested in a president with a cabinet of 16 ministers, legislative authority in a chamber of deputies the 602 members of which are elected for four-year terms, and a senate of 300 members elected for nine years. The presidential term is seven years. The area of France is 207,054 square miles; of the French colonies and dependencies, 4,367,746 square miles. The population of France proper in 1911 was 39,601,509; of Paris, 2,888,110. Imports for home consumption in 1918, \$3,983,000,000; exports, \$828,800,000. Exports to U. S. in 1919, \$62,693,315; imports from U. S., \$976,696,797. The chief exports are textiles, wine, raw silk, wool, small wares and leather; chief imports, wine, raw wool, raw silk, timber and wood, leather, skins and linen.

### Germany

Following the defeat of her armies by the allies, a revolution occurred in Germany in November, 1918. Emperor William II was compelled to abdicate and his cabinet was dispersed. An election was held in January, 1919, for a national assembly, and on February 6 of the same year this assembly met at Weimar. On February 11 it elected Friedrich Ebert first president of the German republic. A constitution was adopted July 31.

The area of the states of the old empire was 208,780 square miles, and of the dependencies 1,027,820 square miles, making a total of 1,236,600 square miles. Omitting Alsace-Lorraine, the area of Germany today is 203,176 square miles, which will be further reduced as the result of various plebiscites. The population of the empire in 1910 was 64,925,933, which included 1,874,014 inhabitants of Alsace-Lorraine; Berlin, 2,071,257. No details of German commerce have been published since the beginning of the war. Exports for the first six months of 1914 amounted to \$1,246,240,000; imports, \$1,346,570,000. Imports from the U. S. during the fiscal year ending June

30, 1919, amounted to \$8,843,882; exports to the U. S., \$944,981.

### Greece

A constitutional monarchy, the executive power being vested in a king and a cabinet of twelve ministers. The legislative body consists of one chamber, called the boule, of 235 members, elected for four years. Area, 41,933 square miles; population in 1914, 4,821,300. Capital, Athens. Exports, 1916, \$20,433,200; imports, \$45,705,000. Exports to the U. S. in 1919, \$22,876,904; imports from U. S., \$22,908,250. The leading exports are currants, ores, olive oil and figs; imports, foodstuffs, textiles, coal and timber.

### Hungary

Proclaimed an independent republic Nov. 16, 1918, with Count Michael Karolyi as president and a provisional legislative assembly. On March 22, 1919, the Karolyi cabinet resigned and was succeeded by a bolshevist cabinet under Bela Kun. This was followed by much rioting and bloodshed in Budapest. Early in August Bela Kun fled the country, and the Roumanians, who had been fighting the Hungarian bolsheviki, took possession of the capital. Though ordered by the peace council in Paris to leave Hungary, the Roumanians remained. A cabinet under Jules Peidl, in power a short time, was overthrown by one formed by Archduke Joseph, also short-lived. At the end of 1919 a government headed by Karl Huszar was in control.

The area of Hungary is about 109,000 square miles. The population in 1910, excluding Croatia and Slavonia, which joined the Jugo-Slav republic, was 18,142,200.

### Iceland

Recognized since Dec. 1, 1918, as an independent state united to Denmark through having the same king. Legislative power is vested jointly in the king and the althing, or parliament, an elective body. Suffrage is universal, all men and women over 25 years of age being voters. Area, 39,700 square miles; population in 1910, 85,183. Imports, 1915, \$7,230,200; exports, \$10,912,210.



Imports from the U. S. in 1919, \$3,884,950; exports to U. S., \$905,774.

### **Italy**

The government of Italy is a constitutional hereditary monarchy, the executive power resting in a king and a council of 15 ministers, the legislative authority being vested in the king and parliament, consisting of a senate of 383 members and a chamber of deputies of 508. Area, 110,632 square miles; population, 1915, 36,120,118. Exports, 1918, \$496,726,100; imports, \$2,820,328,785. Exports to U. S. in 1919, \$21,573,527; imports from U. S., \$496,174,736. Chief imports are coal, cotton, grain, silk, wool, timber, machinery, sugar and oil; exports, silk, wine, oil, coral, sulphur, hemp and flax.

### **Lithuania**

Formerly a province of the Russian empire; proclaimed a republic Nov. 30, 1918, with Karl Ullman first president. Vilna is the capital. Area, 80,000 square miles; population, about 9,000,000, made up of Lithuanians, Letts, Poles, Jews, Germans, White Russians, etc. Military operations in 1919 prevented Lithuania from attaining a condition of stability.

### **Livonia**

One of the Baltic border states. Has seemed to be an independent republic since the fall of the Russian empire. Area, 10,930 square miles; population, 1,744,000.

### **Montenegro**

The exact status of this country had not been definitely settled at the close of 1919, the king, Nicholas I, being absent in Paris and exercising only nominal authority over his country. Area, 5,603 square miles; population, 516,000. Cetinje is the capital. Exports, 1910, \$498,200; imports, \$1,701,300.

### **The Netherlands**

Constitutional hereditary monarchy, the executive power being vested in the king or queen and a cabinet of nine ministers, the legislature being the states-general, composed of two chambers, the first having 50 members elected by the provincial

states, the second 100 members elected directly. Area, 12,648 square miles; population, 1917, 6,724,663. Capital, The Hague. Imports, 1917, \$319,274,274; exports, \$204,824,360. Exports to the U. S., 1919, \$30,652,531; imports from U. S., \$103,801,757. Chief exports are butter, sugar and cheese; imports, iron and steel and their manufactures, textiles, coal, cereals and flour.

#### DUTCH EAST INDIES.

Area, 735,000 square miles; population, 48,000,000. Area of Java and Madura, 50,557 square miles; population, 36,015,435. Chief exports, sugar, coffee, tea, rice, indigo, cinchona, tobacco, copra and tin.

#### Norway

Constitutional hereditary monarchy, executive authority being vested in a king and a cabinet of eleven ministers. The legislature, or storting, consisting of two houses, the odelsting and the lagthing, is elected for three years through universal suffrage of men and women. Area, 124,643 square miles; population, 1918, 2,632,010. Capital, Christiania, 259,445. Imports, 1916, \$458,416,000; exports, \$247,083,100. Exports to the U. S. in 1919, \$3,219,245; imports from U. S., \$101,641,460. The chief exports are timber and wood manufactures, wood pulp, malty food, fish, paper and minerals; imports, breadstuffs, groceries, yarn, textiles, vessels and machinery.

#### Poland

The rehabilitation of Poland along the lines existing before the country was divided between Prussia, Austria and Russia in 1772 was begun in the fall of 1918, and a republican form of government was adopted in which legislative power is vested in a national assembly elected by universal suffrage of all men and women above the age of 21. The executive power is exercised by a president and cabinet. The first president elected was Joseph Pilsudski, his cabinet including Ignace Paderewski, the great pianist, as premier and minister of foreign affairs. The area is estimated at 135,367 square miles

and the population at 36,234,727. The exports of Poland are principally manufactured goods, furniture and beverages; imports, raw materials, such as wool and cotton.

### **Portugal**

A republic, governed by a president with a cabinet of eight ministers. The legislature consists of a national council of 164 members and an upper house of 71 members. First elections held May 28, 1911, and the assembly opened June 19. Area, including the Azores and Madeira, 35,490 square miles; possessions in Africa and Asia, 801,060 square miles. Population of home country, 1911, 5,957,985; of the colonies, 9,139,444. Capital, Lisbon, 435,359. Imports, 1916, \$12,503,000; exports, \$24,642,500. Imports from the U. S., 1919, \$21,975,725; exports to U. S., \$4,427,140. Chief imports, foodstuffs, cotton, sugar, fish, wool, leather, coal and coffee; exports, wine, sardines, copper ore, olives and figs.

### **Roumania**

Constitutional monarchy, legislative authority being vested in a senate of 120 members elected for eight years and a chamber of deputies of 183 members elected for four years. Area, 53,689 square miles; population, 1914, 7,508,009. Capital, Bukharest, 345,628. Exports, 1913, \$134,141,000; imports, \$118,002,500. Exports to U. S., 1919, none; imports from U. S., \$1,050,451. The chief imports are textiles; exports, cereals.

### **Russia**

Since Nov. 8, 1917, the government of Russia, while nominally ruled by a soviet or council of soldiers, workmen and peasants, has been a dictatorship exercised by three men, who call themselves "people's commissioners"—Vladimir Ilitch Ulianov Lenin, president of the Council; M. Tchitcherin, commissioner of foreign affairs, and Leon Trotzky, commissioner for military affairs and the navy. The area of Russia before the upheaval was 8,764,586 square miles, and the population in 1915 was 182,182,600. No accurate figures for soviet Russia can now be given be-

cause the country has been in a state of civil war since the downfall of the czar and a number of provinces of the old empire have declared their independence. Imports, 1916, \$576,500,000; exports, \$201,000,000. Exports to the U. S., 1919, \$2,927,434; imports from U. S., \$11,390,318. The chief exports are foodstuffs, timber, oil, furs and flax; imports, raw cotton, wool, metals, leather, hides, skins and machinery.

### **Serbia**

A constitutional monarchy, with the executive power vested in a king, and the legislative authority in a single house, called the "skuptschina," of 160 elected members. Area, 33,891 square miles; population, 1914, 4,547,990. Capital, Belgrade, 90,890. These figures will be materially changed when the new boundaries have been definitely fixed. Exports, 1912, \$18,595,000; imports, \$14,705,000. Exports to the U. S. in 1919, none; imports from U. S., \$2,696,876. Imports are mainly cotton and woolen goods and metals; exports, agricultural products and animals.

### **Spain**

Constitutional monarchy, executive power being vested in a king and cabinet and legislative authority in a representative assembly, or cortes. Area, 194,783 square miles; population, 1914, 20,355,986. Capital, Madrid, 599,807. Exports, 1918, \$272,501,900; imports, \$256,194,300. Exports to the U. S., 1919, \$30,979,183; imports from U. S., \$98,931,638. Principal exports are wine, sugar, timber, live stock, glassware and pottery; imports, cotton and cotton manufactures, machinery, drugs and chemicals.

### **Sweden**

Constitutional monarchy, governed by a king with a cabinet of eleven ministers. The parliament consists of two chambers. The 150 members of the upper house are elected by "lands-things" or provincial representations and municipal corporations for terms of six years. The 230 members of the second chamber are elected for three years by universal suffrage. Area,



172,876 square miles; population, 1917, 5,800,847. Capital, Stockholm, 413,163. Imports, 1917, \$316,-518,000; exports, \$432,326,750. Exports to the U. S., 1919, \$5,820,070; imports from U. S., \$78,-119,187. The chief articles of export are timber and machinery; of import, textile goods and foodstuffs.

### Switzerland

A republic in which the chief executive authority is vested in the bundesrath or federal council, each member of which is the head of one of the federal departments. Its members are elected president in rotation. The legislative body is composed of a state and a national council, the first having 44 and the second 167 members. The national councilors are elected direct by the people; the state councilors in some cantons by the people and in others by the cantonal legislature. Area, 15,976 square miles; population, 1916, 3,937,000. Exports, 1916, \$488,964,000; imports, \$475,700,920. Exports to the U. S., 1919, \$18,648,788; imports from U. S., \$63,223,-093. Chief exports, cottons, silks, clocks and watches; imports, foodstuffs, silk, minerals, metals and clothing.

### Turkey

A constitutional form of government was adopted July 24, 1908, with legislative authority vested in a parliament. The executive authority rests in a sultan with a cabinet of nine ministers. Before the World War the area of Turkey in Europe was 8,644; of whole empire, 710,224 square miles, and the total population then was 21,273,000. Exports, 1917, \$170,300,000; imports, \$201,106,000. Imports from the U. S. in 1919, \$8,017,376; exports to U. S., \$4,966,558. Chief articles of import are cloth and clothing, sugar, coffee, flour, rice and manufactures of iron; of export, grapes, silk, grain, cocoons, wool, cotton, carpets, hides and skins.

### Ukraine

On Nov. 21, 1917, the Ukrainian republic was proclaimed, but since then this former Russian

province has suffered many vicissitudes, now being in the hands of the bolsheviki and again under control of the enemies of soviet Russia. The capital is Kiev. Area, 216,400 square miles; population, about 30,000,000. Ukrainia in normal times exports large quantities of grain, especially wheat.

### **Jugo-Slavia**

Jugo-Slavia, meaning South Slavia or the state of the Southern Slavs, is composed of Croatia, Slavonia and Dalmatia, which, on Oct. 31, 1918, voted a total separation from Hungary. On Nov. 26 the national council at Agram, the capital, appointed Crown Prince Alexander regent. Area, about 21,360 square miles; population, 3,250,000.

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## **ASIA**

### **Afghanistan**

Governed by an ameer. Area, 250,000 square miles; population, about 6,000,000. The chief productions are preserved fruits, spices, wool, silk, cattle and tobacco.

### **Bokhara**

Since 1873 a dependency of Russia, governed by an ameer. Area, about 83,000 square miles; population, 1,250,000. Principal products, corn, tobacco, fruit, silk and hemp.

### **China**

Nominally a republic, the president possessing autocratic powers. Legislative power is nominally vested in a single house, but it is practically only an advisory body. The president and vice-president are elected for five-year terms. Area, with dependencies, 3,913,560 square miles; population, estimated, 320,000,000. Capital, Peking, 692,500. Exports, 1916, \$402,492,500; imports, \$430,339,000. Imports from the U. S., 1919, \$92,496,112; exports to U. S., \$128,319,451. Chief exports are tea, furs, wool, mats, fans, essential oils, straw braid, silks, hair, hides and hemp. Principal imports from the U. S. are flour, kerosene, sago, rubber, shoes, ginseng, quicksilver, white shirting, drills and broadcloth.

### Japan

Government is vested in an emperor with a cabinet of nine ministers. Legislative power is exercised by the emperor and an imperial diet, consisting of a house of peers with about 375 members and a house of representatives with a membership of 381. Area, 260,738 square miles; population, 1917, including Korea, Formosa and Sakhalin, 77,266,793. Capital, Tokyo, 2,244,796. Imports, 1918, \$834,069,000; exports, \$961,350,-125. Imports from U. S. in 1919, \$326,462,269; exports to U. S., \$303,993,041. Chief imports, sugar, cotton, iron and steel, machinery, petroleum and wool; exports, raw silk, cotton yarn, copper, coal and tea.

### CHOSEN (KOREA)

Formerly an empire, now a Japanese dependency. Area, about 86,000 square miles; population, 1917, 16,998,191. Capital, Seoul, 302,686.

### Java

(See The Netherlands.)

### Khiva

Formerly a Russian vassal state, governed by a khan. Area, 24,000 square miles; population, 646,000. Chief products. cotton and silk.

### Persia

Governed by an emperor, or shah; now a British protectorate. Under a constitution granted in 1906, legislative powers were vested in a national council of 156 and a senate of 60 members. This body, however, has not functioned for some time. Area, 628,000 square miles; population, 9,500,000. Capital, Teheran, 280,000. Imports, 1917, \$72,760,500; exports, \$63,800,000. Imports, 1919, from U. S., \$644,930; exports to U. S., \$447,-675. Principal products are silk, fruits, wheat, barley and rice.

### Siam

Governed by a king. Area, 195,000 square miles; population, 1916, 8,819,686. Capital, Bangkok, 628,675. Imports, 1918, \$37,337,500; exports, \$47,613,500. Imports from U. S., 1919, \$2,113,851; exports to U. S., \$173,231. Chief

exports are rice, teak and marine products; imports, cotton goods and opium.

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## AFRICA

### Abyssinia

A monarchy, Waizeru Zauditu being empress in 1920. Area, 432,432 square miles; population, about 8,000,000. Principal exports are coffee, hides and skins, gum, wax, gold and ivory.

### Algeria

A French colony. Area, 343,500 square miles; population, 1911, 5,563,828. Chief exports are wine, sheep and cereals; imports, cotton, skins and furs and woodwork.

### Egypt

Governed by a sultan and a British high commissioner. Area of Egypt, 350,000 square miles; of the Anglo-Egyptian Sudan, 1,014,400 square miles. Population, Egypt proper, in 1917, 12,710,129; of the Sudan, 3,400,000; Cairo, 790,938. Egypt was formally declared a protectorate of the British empire on Dec. 17, 1914. Exports, 1918, \$226,850,200; imports, \$255,776,559. Imports from the U. S., 1919, \$10,293,189; exports to U. S., \$23,934,571. Chief imports, wool, coal, textiles and metal manufactures; exports, cereals, raw cotton and provisions.

### Belgian Kongo

Became a Belgian colony in 1908. Area, estimated, 909,654 square miles; negro population, about 15,000,000. Imports, 1916, \$24,501,000; exports, \$55,474,800. Exports to U. S., 1919, \$865,053; imports from U. S., \$2,731,839. Leading exports, ivory, rubber, cocoa, palm nuts, palm oil, copal gum and coffee.

### Liberia

A republic, executive power being vested in a president, the law-making body consisting of a senate of nine members and a house of representatives of fourteen. Area, about 40,000 square miles; population, 2,120,000. Exports, 1917, \$618,536; imports, \$902,063. Imports from U. S., 1919, \$333,849; exports to U. S., \$225,163.



**Morocco**

A French protectorate, governed by a sultan. Area, 231,500 square miles; population, 5,400,000. Imports, 1917, \$73,117,015; exports, \$26,511,130. Imports from U. S., 1919, \$1,859,782; exports to U. S., \$304,244.

**Madagascar**

A French colony ruled by a governor-general and a council of administration. Area, 228,000 square miles; population, 1917, 3,545,264. Capital, Antananarivo, 63,115. Imports, 1917, \$27,-354,115; exports, \$17,241,550. Imports from U. S., 1919, \$539,656; exports to U. S., \$26,970.

**Tunis**

A French protectorate, governed by a bey, France being represented by a resident-general. Area, 50,000 square miles; population, 1913, 1,-953,000. Imports, 1917, \$28,408,300; exports, \$25,034,400.

**NORTH AMERICA****The United States—Territorial Growth**

The increase in area of the United States, by war, purchase and treaty, is shown in the following table:

| Year | Territory                           | Square Miles | Acquired from | Acquired by |
|------|-------------------------------------|--------------|---------------|-------------|
| 1783 | 13 original States                  | 892,135...   | England...    | War         |
| 1803 | Louisiana.....                      | 827,987...   | France...     | Purchase    |
| 1819 | Florida.....                        | 58,666...    | Spain....     | Purchase    |
| 1845 | Texas.....                          | 389,166...   | Mexico...     | Union       |
| 1846 | Oregon.....                         | 286,541...   | England..     | Treaty      |
| 1848 | California and<br>New Mexico....    | 529,189...   | Mexico...     | War         |
| 1853 | Southern Arizona<br>and New Mexico  | 29,670...    | Mexico...     | Purchase    |
| 1867 | Alaska.....                         | 590,884...   | Russia....    | Purchase    |
| 1898 | Hawaii.....                         | 6,449.....   | .....         | Treaty      |
| 1898 | Porto Rico.....                     | 3,435...     | Spain....     | War         |
| 1898 | Philippines .....                   | 114,958...   | Spain....     | War         |
| 1898 | Guam.....                           | 210...       | Spain....     | War         |
| 1900 | Tutuila and other<br>Samoan Islands | 77.....      | .....         | Treaty      |
| 1901 | Additional<br>Philippines ....      | 68.....      | .....         | Treaty      |
| 1904 | Panama Canal<br>Zone.....           | 436...       | Panama..      | Purchase    |
| 1918 | Virgin Islands...                   | 142...       | Denmark..     | Purchase    |

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3,730,013

### Alabama

Name Indian, meaning, "We rest here." Mobile founded by French 1702. Admitted to Union Dec. 14, 1819. Seceded Jan. 11, 1861. Montgomery made capital of Confederacy Feb. 4, 1861. Subsequently removed to Richmond, Va. State re-entered Union July 14, 1868.

Climate.—Temperature mild, cool at north, warm at south; average winter 47 deg., summer 81 deg.; July hottest month; range of thermometer 20 to 95 deg., sometimes for a day reaching 102 deg. Rainfall 50 inches. Snow or ice very rare. Trees bloom in February.

Geographical, etc.—Surface at northeast rugged, extending into Alleghany mountains, gradually descends, forming rolling prairies at center of State and flat low stretches at the south. Seacoast 68 miles. Mobile Bay best harbor on the gulf; 1,600 miles of navigable waterways. Length north and south 332 miles, width average 155 miles, area 51,279 square miles, acres 33,440,000. Cotton, mules, iron, coal, sugar, rice, tobacco, hay, oats, corn, staple products. Fruits are a good crop. Much forest remains. Has fair soil and is enormously rich in coal, iron, lime and sandstone, timber and various minerals. Middle section soil fertile and varied. Coast region sandy, but by proper cultivation prolific. Vegetable farming near Mobile very successful.

Leading Industries.—Agriculture and kindred pursuits, mining, iron making, lumbering, etc.

### Arizona

Explored 1526. Mineral wealth found, no important settlements effected because of hostile natives. Organized as territory Feb. 24, 1863. Admitted to Union, Feb. 14, 1912.

Climate.—Exceptionally healthful, and generally mild, except in mountains; temperature averages 38 deg. winter, 73 deg. summer, much warmer at south, the thermometer reaching occasionally 115, and rarely falling below 35 deg. in winter. In central portion heat seldom exceeds 88 to 90 deg.; snow in mountains, but melts

soon. Rainfall on Gila 6 inches, in foothills 28 inches. Heaviest in July and August.

Geographical, etc.—Extreme length north and south, 378 miles, width 339 miles, area 113,020 square miles, acres 72,332,000. Colorado river navigable 620 miles. Flows between perpendicular walls cut in solid rock in places 7,000 feet high. Nearly all mountain ranges contain gold, silver, copper, and lead. Superior quality of lime found near Prescott and Tucson, beds of gypsum in San Pedro valley, remarkable deposits of pure transparent salt near Callville. State ranks second in production of silver. Volcanic peaks reach an altitude of 10,500 feet. Southern portion a plain, dipping occasionally below sea level, and rising only to a very moderate elevation (200 to 600 feet usually); mountains numerous, highest point San Francisco, 11,056 feet. Agriculture possible only in the valleys or where irrigation is practicable. Soil in valleys and bottoms very rich and prolific. Wheat, barley, potatoes, hay, corn, onions are staple field crops; corn follows wheat or barley, giving two crops yearly. Oranges and all semi-tropical fruits do well where water is obtainable. Cattle raising extremely profitable. Desert tracts of considerable area are found. Timber grows on the mountains, foothills, and along the streams. The varieties include pine and cedar on mountains, cotton-wood, walnut and cherry on streams. Size of trees fair, and quantity large. Abundant mineral wealth exists.

Leading Industries.—Mining, grazing, agriculture, lumbering, smelting, etc.

### Arkansas

"Bear State." Settled 1685. Arkansas Territory organized 1819. Admitted as a State June 15, 1836. Number of counties, 75. Slavery acknowledged. Seceded May 6, 1861. Considerable fighting during the war, but no great battles. Re-entered Union 1868.

Climate.—Genial. Temperature ranges 15 deg. to 95 deg., on rare occasions going to 100 deg. Average winter, 45 deg.; summer, 80 deg. Rain-

fall 44 inches, heaviest in southeast, lightest in northwest. Health unsurpassed, especially in northwest.

Geographical, etc.—The scenery varied and charming. Hot Springs (temperature 140 deg.) great natural wonder, and famous for medicinal properties. Length north and south 240 miles, average breadth 212 miles, area 53,845 square miles; acres, 34,460,800. Coal exists on the Ash River, iron in the Ozarks, salt near Ouachita. Oilstone near Hot Springs, kaolin in Pulaski County. Staple products, corn, wheat, cotton, tobacco, oats, sweet potatoes, mules, tar, turpentine, lumber, etc. Soil exceptionally rich and suited to all crops, especially fruits, berries and gardening. State especially favorable to agriculture. Magnificently timbered. Pine, oak, cypress, cedar, hickory, walnut, linn, locust, chief growths.

Leading Industries.—Chiefly agricultural; corn, wheat, etc., in the north; cotton and tobacco in the south.

### California

Golden State. First settled at San Diego, 1763. Gold discovered 1848. Rush of immigration set in 1849. State constitution, without the preliminary of a territorial organization, framed September, 1849. Admitted as a state September 9, 1850. Extreme length north and south, 725 miles, width 330 miles, area 158,360 square miles, 91,350,500 acres.

Climate.—Varies with elevation and latitude. Mild and pleasant on coast. Average temperature at San Francisco in summer 62 deg., winter 50 deg. Warmer in interior, reaching at times 100 deg. Rainfall variable, from 7 to 50 inches at San Francisco. Average at south 10 inches. Melting snow from mountains replaces rainfall. Frosts rare.

Geographical, etc.—Mineral deposits include gold, silver, iron, copper, mercury, coal, stones, salt, soda, etc. Ranks high as a fruit growing state, fruits of temperate climates, sub-tropical



fruits and nuts, grapes, north to 41 deg., olives, etc., grow to great perfection. Fine sheep raising country. Very rich agriculturally and in minerals. Soil warm, genial, and rich. Two crops may be raised in season. Irrigation necessary in parts and almost always desirable. Wheat most valuable crop, all cereals, root crops and grasses do well, corn, barley, grapes, fruit, nuts, silk, hops and oats staples. Coast line over 800 miles wide. San Francisco Bay (40 miles long, 9 wide) magnificent harbor. Yosemite in the Sierras, one of the greatest natural wonders of the world, and the greatest marvel of the State, where scenery is always grand. Mt. Whitney, 15,000, highest peak. Noble forests of redwood and other valuable growths. It is the paradise of the small farmer.

Leading Industries.—Agriculture, stock raising, fruit culture, mining, lumbering, etc.

San Francisco Bay was discovered Nov. 2, 1769, by an expedition headed by Captain Portola and Friar Juan Crespi. In August of the year 1775 a vessel called the San Carlos, commanded by Lieutenant Ayala, passed through what is now called the Golden Gate. The harbor and bay, one of the finest in the world, is a beautiful sheet of water, about forty-five miles in length and eight miles in average width, affording safe anchorage at all times. Its entrance, the famous Golden Gate, is a strait about four miles in length and two miles in average width. The depth of water is sufficient for the largest vessel or craft to enter with ease and safety. The first permanent settlement of white men on the shores of this bay was made in June, 1776, by an expedition from Monterey under Friars Francisco Palou and Benito Cambon, accompanied by several settlers with their families and a detachment of soldiers under the command of Don Jose Moraga. About this time a few adobe buildings were erected near the shores of the bay, and the settlement named Yerba Buena. On the 30th of January, 1847, an ordinance was issued by the Alcalde directing

that the name of the town be changed from Yerba Buena to San Francisco. In 1848 the first discovery of gold was made in the vicinity, at which time there were about 500 residents. From that period San Francisco began to attract the attention of the civilized world. The earthquake of April 18, 1906, caused fire to break out in many places, and the whole flourishing city was practically consumed by the flames.

### Colorado

Part of Louisiana purchase of 1803. First explored by Vasquez Coronado under the Spanish, 1540. First expedition sent out by United States Government, under Major Pike, 1806; a second under command of Col. S. H. Long, 1820, and in 1842-44 Gen. John G. Fremont made his celebrated trip across the Rocky Mountains. First settlement made by miners, 1858-59, near Denver. Organized as Territory, February, 1861. Indian troubles 1863-4. Admitted as a State Aug. 1, 1876.

Climate.—Dry and range of temperature comparatively small. Winters mild, summers cool. Average temperature winter 31 deg., summer 73 deg. Rainfall mainly in May, June and July, average 18 inches. On mountains winters severe, accompanied by heavy snowfall; violent winds common; fogs unknown. Health unsurpassed.

Geographical, etc.—Richest State in the Union in mineral productions. Length east and west 380 miles, width 280 miles, area 103,845 square miles; acres, 66,460,800. Rocky Mountains traverse State north and south with three ranges, having many peaks more than 13,000 feet high. Scenery grand beyond words. Mountains fairly clothed with pine and other trees. Mineral wealth inexhaustible. State ranks first in silver, fourth in gold. Iron, soda, coal, copper, lead, stone, mica, etc., exist in large deposits. Fine grazing grounds. Much rich soil along streams and wherever irrigation is possible. Cereals do very well. Corn, wheat, oats, hay, staple crops. Cattle, sheep and hog raising safe and profitable. Dairying

pays, as does gardening. Timber resources moderate. The Garden of the Gods is the fanciful title of a little mountain valley lying four miles northwest of Colorado Springs. The road enters it through the "Beautiful Gate," which is a narrow passage-way between two lofty but narrow ledges of cliffs, which is still further narrowed by a rock pillar thirty feet high, standing nearly in the center. The garden consists of a tract of land somewhat less than 500 acres in extent, hemmed in by mountains on the west and north, bordered by ravines on the south, and on the east by a line of old red sandstone cliffs which shut it in entirely from the plains. Its remarkable features are a number of isolated rocks, upheaved into perpendicular positions, some of them 350 feet high. These rocks are mainly of a very soft, brilliantly red sandstone, though several ridges are of a white sandstone. The foothills in the vicinity are many of them capped by similar upheavals, while all about the main cliffs in the valley are numerous separate spire-like columns.

Leading Industries.—Mining, smelting ores, agriculture, grazing, etc.

### Connecticut

One of the original 13 States. Explored by the Dutch settlers of Manhattan Island, 1615, by whom settlement was made, 1633, at Hartford. The State furnished a very large quota of men to the Revolutionary armies. Yale College founded 1701. Area, 4,990 square miles.

Climate.—Moderate and healthy; average temperature, summer 72 deg., and winter 28 deg. Occasionally the thermometer sinks below zero, considerable snow falls, summers warm. Rain-fall, including snow, about 47 inches.

Geographical, etc.—Corn, oats, hay, wheat, tobacco and vegetables are the staple crops. No valuable timber remains. Stone extensively quarried. Valuable iron mines exist. Ranks first in clocks, third in silk goods, fourth in cotton goods, eighth in tobacco. Surface less rugged than the other New England States. Mountain range

terminates in this State in a series of hills. The coast is indented by numerous bays and harbors. Soil, except in valley, light and stony.

**Chief Industries.**—Manufacture of hardware, clocks, silks, cotton, rubber, carpets, woollens, arms, sewing machines and attachments, dairying, quarrying, agriculture, etc.

#### **North and South Dakota**

So called for a tribe of Indians of the same name. First permanent white settlement made by Lord Selkirk at Pembina, 1812; organized as a Territory, 1881; first legislature at Yankton, March, 1862. Admitted as two States, North and South Dakota, on Feb. 22, 1889.

**Climate.**—Temperature ranges from 32 deg. below zero to 100 deg. above. Averages, winter 4 to 20 deg., summer 65 to 75 deg. Winters at north severe, with heavy snow. Moderate at the south. Air clear, dry and free from malaria. Cold not so penetrating as in moister climates. Springs late and summers of medium length. Rainfall 10 inches, chiefly in spring and summer.

**Geographical, etc.**—Areas: North Dakota, 70,-879 square miles, or 45,362,560 acres; South Dakota, 77,580 square miles, or 49,660,200 acres. The Missouri River traverses these States diagonally from northwest to southeast, and is navigable. Indian reservations principally west of Missouri River, 42,000,000 acres, one-seventh good farming land. Surface high, level plain 950 to 2,000 feet above the level of the sea, traversed by ranges of lofty hills, which at the southwest reach an elevation of 7,000 feet in the Black Hills. Gold and silver extensively mined. Black Hills very rich in precious minerals. Lakes are numerous, especially in the north and east. Devil's Lake is semi-salt. Soil very rich and peculiarly suited to wheat, which is the staple crop. Corn, oats, grasses, and potatoes do well. Fruit not a good crop. Cattle, and especially sheep raising, favored and growing industries. Timber scarce, except along the streams and in some of the hills.

**Industries.**—Almost entire laboring population engaged in agriculture and mining.



### Delaware

One of the thirteen original States, named in honor of Lord Delaware, Governor of Virginia, who entered the bay, 1610. First permanent settlement made by Swedes, who bought from Indians, near present city of Wilmington, 1638. First to ratify Federal constitution, 1787. Took vigorous part in the Revolution. Was a slave State.

Climate.—Mild, tempered by sea breezes. Average temperature, winter 32 deg. to 48 deg.; summer, 72 to 78 deg. Rainfall 48 to 50 inches. At north health excellent. Some malaria on the lowlands bordering the swamps at the south.

Geographical, etc.—Length north and south nearly 100 miles, width 10 miles at north, 36 at south. Area 2,050 square miles, or 1,412,000 acres. Available area large. Northern portion rolling, but free from large hills. Iron is found, but is no longer worked. Scenery beautiful. Southern portion level and sandy, with frequent cypress marshes. Coast low and swampy, with lagoons separated from sea by sand-beaches. Breakwater protecting Delaware Bay at Cape Henlopen cost the United States \$2,127,400, and was over 40 years in course of construction. Streams flow into Chesapeake and Delaware bays and are small. Tide reaches to Wilmington. The soil is good and the state of cultivation superior. Staple crops, corn, wheat, peaches, berries, garden vegetables, sweet potatoes.

Industries.—Agriculture and kindred pursuits, manufacture of flour, lumber, cotton, iron, steel, leather, etc., shipbuilding, fishing, canning and preserving.

### District of Columbia

Fixed as seat of U. S. Government 1790 by an act of Congress. Formed out of Washington County, Md. (64 square miles). Government removed to District 1800. Captured by British 1814, and capitol, executive mansion and congressional mansion burned. Governed by Congress till 1871, when a legislative body of 33 (11 appointed by the

President and 22 elected) was created. Executive officers still appointed by President. Officers appointed are paid by the United States, those elected by the district. Citizens of District have no vote for national officers. Surface made up of flats and hills. Similar in all features and products to Southern Maryland.

The District of Columbia is governed by a commission or board of regents consisting of three persons, who are appointed by the President and confirmed by the Senate. This board constitutes the chief executive authority of the District and appoints and directs subordinate boards to attend to the general affairs of the District, with the exception of the superior officer of the Board of Public Works, who is detailed by the President from the engineer corps of the army. Part of the members of the Board of Education are elected by the people of the District, and this is the only election held there.

The Washington Monument.—The plan of a monument to General Washington was approved by Congress in a resolution passed less than a fortnight after his death, which occurred Dec. 14, 1799. The monument was to be built by the United States, and it was at first proposed to bury the deceased hero in a vault at its base. Nothing was done, however, until, in 1833, the project was revived by an association of prominent persons, who raised a fund by subscription, and laid the corner-stone July 4, 1848. During the following eight years the shaft was carried to a height of 156 feet. Then work was suspended; at first from lack of funds, then because of the war, and finally because the foundations were believed to be insecure. For twenty years the unfinished work stood just as it had been left by the workmen, surmounted by a derrick, and surrounded by the unused blocks of marble and heaps of debris, a most unsightly pile, and the source of sincere mortification to patriotic Americans visiting the capital. Finally, in 1876, Congress was induced to undertake the completion of the monument. The first thing to be done was

to rebuild and strengthen the base. This was successfully performed, and in August, 1880, the work of building the shaft was resumed. Congress appropriated \$800,000 for the work, which covers the cost of the shaft. The shaft was finished Aug. 9, 1884; the superstructure of the pyramid completed in December, 1884. The monument is built of crystal marble, from Maryland, and rests upon a foundation of Potomac gneiss 81 feet square at the base. The base of the shaft is 55 feet square on the outside and 15 feet thick. It is 500 feet high, and the pyramid which caps it is 55 feet in height, rendering the whole one of the highest structures in the world.

The White House at Washington, D. C.—The White House at Washington, D. C., is 170 feet long by 86 feet wide. The largest apartment, known as the East room, is 80 by 40 feet in dimensions and 12 feet high. The adjoining Blue room, finished in blue and gold, is devoted to receptions, diplomatic and social. The Green and Red rooms, so called from their finishing, are each 30 by 20 feet. The rooms on the second floor are occupied as the apartments of the President's family. Wings added in 1901-2, costing more than \$500,000.

The National Capitol.—The southeast cornerstone of the Capitol was laid Sept. 18, 1793, "by Brother George Washington, assisted by the Worshipful Masters and Free Masons of the surrounding cities, the military, and a large number of people." The north wing was ready for occupancy in 1800, the south wing in 1808; but both were partially destroyed by the British in 1814. The foundation of the main building was laid in 1818 (March 24), the restoration of the wings having been commenced three years earlier; and the whole was completed in 1827. July 4, 1851, the cornerstone of the south extension was laid by President Fillmore, and this was finished in 1857. The north extension was occupied by the Senate in 1859. The present dome, commenced in 1855, was completed eight

years later, and Dec. 12, 1863, the American flag floated from its summit. Thus far the cost of the entire building has been \$13,000,000—main building, \$3,000,000; dome, \$1,000,000; extensions, \$8,000,000; miscellaneous items, \$1,000,000. The length of the entire building is 751 feet 4 inches; its greatest breadth, 324 feet; and it covers a little over  $3\frac{1}{2}$  acres. The distance from the ground to the top of the dome is  $307\frac{1}{2}$  feet; the diameter of the dome,  $135\frac{1}{2}$  feet.

### Florida

Settled by Spaniards at St. Augustine, 1565. Pensacola taken from England by General Jackson during war of 1812. Entire province ceded to United States 1819. Organized as a Territory, 1822; admitted as a State, 1845; seceded 1861; re-admitted, 1868.

Climate.—Superb. No snow. Frosts rare at north, unknown at south. Temperature range 30 deg. to 100 deg., rarely above 90. Winter averages 59 deg., summer 81 deg. Breezes blow across from Gulf to Atlantic, and vice versa; temper the heat and keep air dry and clear. Average rainfall 55 inches, chiefly in summer.

Geographical, etc.—Area 58,680 square miles, 37,451,000 acres. State surrounded by sea except on north. Coast line over 12,000 miles. Good harbors rare, mostly on Gulf. Shore low, frequently not two feet above tide-water. Surface dotted with lakes. In the middle section are found tracts of great richness. At the south the soil, when dry or reclaimed, is inexhaustible. The northern section is a limestone formation, affording a fair soil. Four-fifths of Florida is in the Peninsula, which is about 350 miles north and south, and 105 miles east and west. Remainder is the narrow strip along the Gulf, 342 miles east and west, and 10 to 50 miles north and south. Much forest remains. Timber chiefly pine, of moderate sizes, free from undergrowth. Game abounds. Poultry and stock raising are successful. The staple products are corn, sugar, molasses, rice, cotton, oats, tobacco, vegetables of all kinds, peaches, oranges, and all tropical and



semi-tropical fruits, cocoanuts, lumber, fish, oysters, etc.

**Principal Industries.**—Almost the entire laboring population engaged in agriculture and fruit growing. Fishing for fish and oysters and lumbering largely followed.

### Georgia

Farthest south and latest settled of the thirteen original States. Named in honor of George II; settled by English at Savannah, 1733. Originally a part of South Carolina and claimed by Spain. Severe wars with Creeks and Cherokees settled by treaties 1790 and 1791. Seceded January, 1861; re-admitted December, 1870.

**Climate.**—At the north mild and extremely healthy, hot in the lowlands. Range of temperature 30 deg. to 105 deg. Average, winter 49 deg., summer 82 deg. Rainfall averages 55 inches.

**Geographical, etc.**—Greatest length north and south 321 miles, greatest width 255 miles, area 59,475 square miles, or 38,064,000 acres, exclusive of water area. Surface diversified. In the southeast is the Okefinokee swamp, 150 miles in circumference. At the north are the Blue Ridge, Etowah and other mountains. Coast irregular and indented, shore line about 500 miles; three seaports. Mountain streams are rapid, with picturesque cataracts and immense basins. The chief falls are the Tallulah, in Habersham County; Toccoa, in the Tugalo, 180 feet high; Towaliga, in Monroe County, and the Amicolah, which descend 400 feet in a quarter mile. Coal, iron, marble exist. One-fourth area heavily timbered with yellow pine of great value for lumber, turpentine, etc. Corn, wheat, oats, cotton, rice, sweet potatoes, tobacco, sugar and melons chief agricultural staples. Fruit, both temperate and semi-tropical, thrives. Stock flourishes. Wool-growing important. Gold is extensively mined.

**Principal Industries.**—Three-fourths population engaged in agriculture. Remainder in various pursuits. Manufacturing important.

### Idaho

Permanent settlement began with discovery of gold in Oro Fino Creek, 1860. Organized as Territory, 1863. Adopted State constitution, 1889; admitted to the Union, 1890.

Climate.—Severe, with heavy snows in mountains; on plains less severe, but cold and bracing. In the valleys it is milder, with moderate snowfall. Summers cool and pleasant. Temperature averages 20 deg. in winter, 70 deg. in summer. Rainfall small in the Rocky and Bitter Root mountains, and very light at the north and west.

Geographical, etc.—Length 140 to 490 miles, width 45 to 286 miles. Area 84,800 square miles, 54,272,000 acres. Surface table land and mountains. About one-twelfth is arable and one-tenth more grazing land. A third, once barren, has been reclaimed by irrigation. Many lakes are found, as well as numerous water powers. The soil, where water can be had, is fertile. Wheat, oats, rye, barley, potatoes and hay are good crops and dairying and stock-raising profitable. Manufactures chiefly production of flour and lumber and smelting of ores. Gold is found in Idaho, Boise, Alturas and other counties, silver in Owyhee County, etc. Wood River district, on southern slope of Salmon River mountains, is the scene of valuable mining operations, chiefly placers. Coal in various localities. State ranks high in gold and silver.

Leading Industries.—Mining, grazing, agriculture, smelting, lumbering and fruit growing.

### Illinois

Name derived from Illini tribe of Indians, meaning Superior Men. First coal mined in America at Ottawa. First permanent settlement by French at Kaskaskia, 1682; organized as a Territory, 1809; admitted as a State, 1818. Fort Dearborn (Chicago) massacre, 1812, by Pottawatomies. Capital moved to Springfield, 1836.

Climate.—Healthful as a rule; subject to sudden and violent changes at north. Temperature

ranges from 20 deg. below zero to 101 deg. above. Average temperature at Springfield 30 deg. winter; 78 deg. summer. At Chicago, 25 deg. winter; 72 deg. summer. At Cairo, 38 deg. winter; 80 deg. summer. Frost comes last of September. Vegetation begins in April. Rainfall 37 inches.

Geographical, etc.—Extreme length north and south 386 miles, extreme width 218 miles. Average elevation 482 feet; elevation at Cairo, 340 feet; highest point, 1,140 feet, in northwest portion. Area, 56,650 square miles, 36,256,000 acres; miles of navigable waterways, 4,100. Frontage on Lake Michigan, 60 miles. Fruits and grains do well at south. Yield of all crops large. Coal area two-thirds of State. Among first agricultural States of Union. Staple crops, corn, wheat, oats, rye, barley, broomcorn, vegetables, hay, potatoes, etc. Considerable forest of hardwood at south on hills and in bottoms. Superior quality limestone on Fox and Desplaines rivers; lead most important mineral. Galena in center of richest diggings in northwest. Rich salt wells in Saline and Gallatin counties, 75 gallons brine making 50 pounds salt. State ranks first in corn, wheat, oats, meat packing, lumber traffic, and miles railway; second in rye, coal, agricultural implements, soap and hogs; fourth in hay, potatoes, iron and steel, mules, milch cows and other cattle.

Industries.—Agriculture, mining, stock-raising, slaughtering, and manufacturing of all kinds.

### Indiana

First settled by Canadian voyagers at Vincennes, 1702; organized as a Territory, 1800; admitted, 1816. Sixth State admitted.

Climate.—Changeable in winter, but seldom severe; winds from north and west; summers moderately long, and sometimes hot; temperature averages, winter 34 deg., summer 78 deg. Trees blossom in March. Rainfall 40 inches. Health excellent.

Geographical, etc.—Extreme length north and south 275 miles, width averages 150 miles, area

36,350 square miles, 23,264,000 acres. Surface sometimes hilly. No mountains. Hills 200 to 400 feet above the surrounding country. Frontage on Lake Michigan, 43 miles. State highly favored for agriculture and manufacturing. Cattle, hogs, sheep, horses, etc., are most successfully raised. Corn, wheat, oats, staple crops. River bottoms wide and unsurpassed in fertility; highlands, when level, rich, black, or sandy soil. All crops and fruits of the temperate zone do well both in yield and quality. Timber still abundant at south, but in scattered tracts. Coal fields in southwestern portion of State over 7,000 square miles, on much of which are three workable veins. Kinds of coal, block, cannel and ordinary bituminous, cokes well, superior for gas. Iron ore is found. Building stones varied and of unsurpassed quality, including the famous Bedford stone. Supply unlimited. The discovery of natural gas in Indiana largely increased its importance as a manufacturing center, also its population.

Industries.—Ninety-four per cent of the area is in farms. Chief crops are corn, wheat, oats, hay and potatoes. Of tobacco 8,715,000 pounds were raised in 1910; the wool clip amounted to 2,860,000 pounds. In the mines 19,707 persons were employed and the output of coal was valued at \$15,114,300, while 11,339,124 barrels of crude petroleum were produced and \$4,342,409 worth of natural gas, conveyed to consumers by 5,258 miles of pipe. Portland cement 3,782,841 barrels. The most important branches of manufacture are iron and steel goods, glass, flour-milling, distilling, meat packing, the making of wagons, agricultural implements and furniture. Bricks, tiles, pipes, pottery, etc., were produced to the value of \$6,858,124.

### Iowa

Name is of Indian origin, and means "The Beautiful Land." Settled first by Dubuque, 1788, a French-Canadian for whom that city is named. Part of the Louisiana purchase; merged into Missouri Territory, 1812; into Michigan, 1834; into Wisconsin, 1836. First settled by miners of lead.



Active immigration begun 1833. Iowa Territory organized July 4, 1838. Admitted as State, 1846.

Climate.—Subject to extremes. Winter severe, with sharp north and west winds; summer pleasant. Temperature averages, summer 72 deg., winter 23 deg.; ranges from 10 deg. below to 99 above zero. Rainfall 42 inches. Wheat harvest in August.

Geographical, etc.—Extreme length east and west, 298 miles, width 208 miles, area 56,025 square miles, 35,850,000 acres. Surface almost an unbroken prairie, without mountains and with very few low hills. Natural meadows everywhere and water abundant. Many small lakes at north. Highest point, Spirit Lake, 1,600 feet above the sea. Coal area fair. Other minerals unimportant. Manufacturing active. State ranks first in hogs, second in milch cows, oxen and other cattle, corn, hay and oats; third in horses; fifth in barley and miles of railway. Soil superior. Corn, wheat, oats, potatoes, hay, barley, sorghum, rye, staples. Apples unsurpassed in United States; pears, plums, cherries, grapes and berries are excellent crops. Cattle and other stock interests large and thrifty. Dairying attractive. Forest area small—scarcely equal to home requirements.

Leading Industries.—Agriculture, stock-raising and manufacturing.

### Kansas

Name, Indian, means "Smoky water." Visited by Spaniards 1541, and by French 1719. Part of Louisiana purchase, and afterward of Indian Territory. Organized as a Territory 1854. Admitted as a State January, 1861. Law known as "Missouri Compromise," forbidding slavery in states, repealed, and question of slavery left to the territory. At first it was decided for slavery. Constitution prohibiting slavery adopted July, 1859. First railroad built, 1864, 40 miles long.

Climate.—Salubrious. Winters mild, summers warm, air pure and clear. Temperature averages winter 31 deg., summer 78 degrees., ranges 8 deg. below to 101 deg. above zero; such extremes ex-

ceptional. Rainfall average 45 inches at east, 33 inches at west.

Geographical, etc.—Extreme length east and west 410 miles, breadth 210 miles, area 82,236 square miles, 51,631,040 acres. No mountains. There is little navigable water. Manufacturing growing. State ranks fifth in cattle, corn and rye. Fruit successful. Forests small. Soil of prairies deep loam of dark color; bottoms sandy loam. Peculiarly favorable to stock-raising. Prairie rich in grasses. Dairying favored. Corn, wheat, oats, hemp, flax and rye, staples. Castor beans and cotton grown successfully. Water powers of fair proportions; irrigation necessary in large sections. Coal area of moderate extent; veins usually thin; quality fair.

Leading Industries.—Agriculture, stock-raising, manufacturing, etc.

### **Kentucky**

Name, Indian, signifies dark and bloody ground, because the State was the hunting and battle ground of the tribes. Louisville founded 1780. Earliest explorations made by John Finley and others 1767; Daniel Boone established himself there in 1769. Admitted as a State Feb. 4, 1791.

Climate.—Variable, favorable to health and agriculture; healthfulness not surpassed. Snows fall, but disappear in a few days. Sleighing only for a day or so. Winters moderately long. Malaria very rare, except on the Ohio and Mississippi rivers. Thermometer ranges from 5 deg. below zero to 98 above, rarely greater extremes are known. Temperature averages, summer 75 deg., winter 38 deg.; rainfall, 50 inches.

Geographical, etc.—Extreme length east and west 350, width 179 miles, area 40,000 square miles, 25,600,000 acres. River frontage 832 miles, navigable waterways 4,120 miles. Natural wonder, Mammoth Cave, greatest in the world. Kentucky ranks high as an agricultural and stock state. Staple crops, corn, wheat, tobacco, oats, barley, hemp, rye, and vegetables; fruits do fairly. Famous for thoroughbred horses and cat-

tle. Soil fair, except in the famous "Bluegrass region," extending for 40 or 50 miles around Lexington, and one of the most beautiful sections on the globe. Coal, marbles, minerals, oil, stone, etc., also abound. Iron deposits of immense magnitude are known to exist. Mules and hogs largely raised. At the east in the mountains are immense forests of virgin oak, poplar, ash, chestnut, elm, walnut and other valuable timber trees. State ranks first in tobacco.

### Louisiana

Named in honor of Louis XIV of France. Purchased by United States, 1803, for \$15,000,000. Louisiana admitted as a State under present name, April 8, 1812. First sugar cane cultivated in United States, 1751. First sugar mill, 1758. First shipment of cotton abroad, 1784. Seceded Jan. 21, 1861. Some fighting on the river between boats and forts. New Orleans captured May 1, 1862. In June, 1868, State re-entered Union.

Climate.—Temperature ranges from 44 to 100 deg., average summer 81 deg., winter 55 deg. Rainfall 57 inches, chiefly in spring and summer. Summers long and occasionally hot. Health average. Actual death-rate lower than in many northern sections.

Geographical, etc.—Extreme length east and west 294 miles, breadth 284 miles, area 49,626 square miles, 31,760,000 acres. Coast line 1,276 miles, very irregular; navigable rivers 2,700 miles. Mississippi flows in or on the borders of the State. Bays numerous on coast but harbors indifferent. Many small islands in gulf. Timber superior in kind and quality, lumber important industry. Salt produced on a large scale.

Industries.—Three-fifths of laboring population engaged in agriculture. Staple products, sweet potatoes, sugar, molasses, rice, corn, cotton, grasses, oats, etc. All fruits of the semi-tropical climate thrive. State ranks first in sugar and molasses, and third in rice.

### Maine

The "Pine Tree State," originally included New Hampshire. Settled by the English at Bristol, 1624; admitted 1820.

Climate.—Excellent, except for pulmonary troubles. Winter average 29 deg., summer 67 deg.; rainfall 45 inches; snow lies 80 to 130 days. Death-rate low.

Geographical, etc.—Extreme length north and south 298 miles, width 210 miles, shore line about 2,480 miles, area 33,056 square miles, land 29,885 square miles, 21,155,840 acres. Valuable slate quarries from the Kennebec to the Penobscot; granite is obtained in blocks of immense size. Ranks fifth in buckwheat and copper; eighth in hops and potatoes. Hay the most valuable crop. Area of lakes and streams, one-thirteenth entire State. The soil is medium only, except on some of the streams, where it is rich. Surface hilly, mountainous toward center. Highest point, Katahdin, 5,400 feet; largest island, Mount Desert, 92 square miles. The ordinary vegetables grow. Half the State is forest of excellent timber.

Chief Industries.—Lumbering one of chief industries, forests covering over 10,000,000 acres; number saw-mills 848, total products \$7,933,868. Agriculture and kindred pursuits, lumbering, fisheries, \$3,620,000 yearly; quarrying, ship-building (380 establishments).

### Maryland

One of the thirteen original States; named in honor of Maria, wife of Charles II., King of England; first permanent settlement made by English Roman Catholics at St. Mary's, 1634. Baltimore founded 1730. Federal Congress met at Annapolis 1783, when Washington resigned command of army. Federal constitution ratified April 28, 1778. Fredericktown and other places burned in war of 1812, and Fort McHenry bombarded. First blood of civil war shed at Baltimore, April 19, 1861. Legislature opposed war April 26, 1861, but passed resolutions favoring the South.



Climate.—Mild, agreeable and healthful; some little malaria in lowlands. Temperature softened by ocean. Winter averages 37 deg., summer 78 deg. Rainfall, 42 inches.

Geographical, etc.—Length east and west 196 miles, width 8 to 122 miles. Area, 12,297 square miles. Acreage of State 7,871,000; water surface large. Western and northern sections mountainous and broken. Chief navigable rivers, Potomac, Susquehanna, Patuxent, Patapsco, empty into the bay. At the west is the Youghiogheny. Chesapeake Bay almost divides the State. Tide-water coast nearly 500 miles. Copper is found in Frederick and Carroll counties, iron ore in Alleghany, Anne Arundel, Carroll, Baltimore, Frederick and Prince George's counties. Great oyster, fish, fruit and vegetable producing state. Oyster beds most valuable in Union. Wheat, corn, oats, buckwheat and tobacco staple crops. Soil varies from very poor to very good. Considerable good timber remains. Enormous coal fields west.

Chief Industries.—Agriculture and fruit growing, oyster and other fishing, canning, coal, iron and copper mining, manufacture of cotton goods, etc.

### Massachusetts

One of the thirteen original States. First settlement 1602, abandoned the same year. Explored 1614 by Captain John Smith. First permanent settlement made by English Puritans at Plymouth, 1620. Boston settled 1630. First American newspaper Boston, 1690. Battle of Lexington first blood of Revolution. Ratified United States Constitution Feb. 6, 1788. Massachusetts was active in bringing on Revolution. Boston massacre March 5, 1770. Destruction of tea Dec. 16, 1773. Boston port bill passed March, 1774.

Climate.—Winters severe and protracted, summers short and warm; thermometer ranges from 10 deg. below to 100 deg.; averages summer 73 deg., winter 24 deg. Snow falls October to April. Rainfall, including snow, 44 inches.

Geographical, etc.—Length northeast to south-

west 162 miles, breadth 47 miles in west and 100 in eastern part. Area 8,315 square miles, 5,321,600 acres. Coast extensive and irregular, with numerous good harbors. The Merrimac only large stream entering sea within the State. Soil generally light; hay best crop; wheat, oats, corn and vegetables grown. Forests practically exhausted. Stone is found. No minerals mined. The Taconic and Hoosac ridges traverse the State at the west. Saddle Mountain, 3,600 feet, the highest peak. The east and northeast divisions are hilly and broken, and the southeast low and sandy. Scenery very beautiful, especially in Berkshire hills. Elizabeth Island, Martha's Vineyard, Nantucket and smaller islands to the south belong to the State.

Chief Industries.—Agriculture and kindred callings, fishing for cod and mackerel (half the fishing vessels of the Union owned here), manufacture of cotton, woolen, worsted, silk, iron and steel goods, soap and implements, quarrying.

#### Michigan

Name of Indian origin, signifying Lake Country. First white settlement within limits of State, Sault Ste. Marie, 1668; organized as Territory, 1805; admitted, 1837. Thirteenth State to enter Union. Received upper peninsula as compensation for disputed territory same year.

Climate.—Temperature averages at Detroit, winter, 30 deg., summer 70 deg., at Sault Ste. Marie, winter 23 deg., summer 65 deg. Rainfall at Detroit 30 inches, at Sault Ste. Marie 24 inches. Health excellent.

Geographical, etc.—Lower peninsula consists of plains and table lands, heavily timbered with pine and hardwoods, and small prairies. Soil generally good, but patches of sand occur. Fruit raising, especially apples, peaches, and grapes, very successful. All cereals make good crops, except corn at north. Staples, wheat, corn, oats, buckwheat, potatoes, barley, etc. Upper peninsula broken, rocky and almost mountainous, rising at west to 2,000 feet above sea. Western por-

tion mining region, eastern portion favorable to agriculture. State ranks first in copper, lumber and salt; second in iron ore, third in buckwheat, fifth in sheep, hops and potatoes. Rivers, inlets, and small lakes numerous. Water good and well distributed. Copper, valuable iron, coal and salt abundant.

Chief Industries.—Lumbering, mining, farming, fruit raising, manufacturing, fishing, etc.

### Minnesota

Named from the river; term of Indian origin, signifying "whitish or sky-colored water." It is the state of small lakes, including over 7,000, varying from a few rods to 38 miles across. In one of these, the Itasca, the Mississippi rises. The other principal rivers are the Minnesota, Red River of the North, and the St. Louis. Small streams and lakes make water plentiful. The scenery is picturesque and beautiful. Organized as a Territory, 1849; admitted, 1858. Explored by Fathers Hennepin and La Salle, 1680, via Mississippi River to Falls St. Anthony.

Climate.—Healthful. Air pure and dry, summer warm, averaging 68-70 deg.; winters cold, averaging 9-24 deg. Rainfall 36 inches, chiefly in summer. Snowfall medium.

Geographical, etc.—Length north and south 378 miles, average width 261 miles; area, 86,335 square miles, 55,214,000 acres. Surface rolling plain, 1,600 feet above the sea level, except at northeast where a series of sand hills called "Heights of Land," 1,600 feet high. The soil is splendid as a rule, and the accessibility to market and general attractions render the state especially favored by agriculturists. Wheat is the great crop. Corn, oats, barley, hay and dairy products are also staples. State ranks fourth in wheat. The forests of the State are small (2,000,000 acres), but in parts are rich in fine timbers.

Chief Industries.—Agriculture, dairying, mining, etc. Principal agricultural products, wheat, corn, oats, barley, flaxseed and beet sugar.

### Mississippi

Name of Indian origin, signifying "Father of Waters." Visited by De Soto 1542, by La Salle 1682. Biloxi settled 1699, by M. d' Iberville. Admitted 1817; seceded 1861; re-admitted 1870. Formed part of the territory of Louisiana, and belonged to France. Seventh State admitted. Capital fixed at Jackson, 1822. State active in war 1814 and with Mexico. Shiloh the most notable battle of the rebellion in the State.

Climate.—Mild, snow and ice unknown. Summers long and warm, July and August hottest months. Temperature averages summer 80 deg., winter 50 deg. Rainfall 46 inches at north, 58 inches at south. Highlands very healthy. Malaria in bottoms.

Geographical, etc.—Greatest length north and south 304 miles, average width 143 miles, area 46,810 square miles, 29,657,600 acres. Some hills reach 200 feet above surrounding country. From Tennessee line south to Vicksburg, Mississippi bottoms wide, flat, with more or less swamp, and covered with cypress and oak. Soil an inexhaustible alluvium, light but productive, at south sandy, with pine growth. Surface undulating, with a gradual slope from elevation of 700 feet at northeast, west and south to the Mississippi and Gulf. Coast line, including islands, 512 miles. Harbors, Biloxi, Mississippi City, Pascagoula and Shieldsburg. Forest area large; pine, oak, chestnut, walnut and magnolia grow on uplands and bluffs, long-leaf pine on islands and in sand. Lumbering important industry; mules raised with great success. State ranks second in cotton, fifth in rice. Oyster and other fisheries valuable. Cotton lands mostly in Yazoo and Mississippi bottoms. Cotton prolific. Staple crops cotton, rice, sugar, molasses, tobacco, corn, sweet potatoes. Fruits and vegetables are splendid crops, but are neglected.

Leading Industries.—Agriculture, lumbering, fishing and canning.



### Missouri

Name, Indian, means "Muddy River," and was taken from the river of same name. Settled first at St. Genevieve. Organized as Territory under present name 1812, included Arkansas, Indian Territory, etc. Admitted March 20, 1821. Eleventh State admitted. State divided on secession, and was scene of perpetual internal warfare. "Missouri Compromise" effected and State permitted to retain slavery.

Climate.—Variable, with sudden changes, but generally pleasant and healthy. Average temperature summer 76 deg., winter 39 deg. Rainfall greatest in May, averages 34 inches. Summers are long and warm, but not enervating. Winters moderate, with occasional severe days.

Geographical, etc.—Length north and south, 575 miles. Average width 240 miles. Area 69,-137 square miles, 44,247,680 acres. Soil generally good. Entire area well watered by small streams, springs, etc. South the surface is broken with hills, sometimes 1,000 feet high. The most noted, Iron Mountain and the Ozarks. West of Ozarks is a prairie region with wide, deep, fertile valleys. State ranks first in mules, third in oxen, hogs, corn and copper; fifth in iron ore. Growth walnut, poplar, oak and the hardwoods; grazing a leading business both in extent and profit. Stock of all kinds raised with success. Coal, iron, marble, granite, limestone, lead and copper found in enormous deposits. Lead area 5,000 square miles. Chief crops corn, wheat, oats, potatoes, tobacco. Fruits do splendidly.

Leading Industries.—Agriculture, mining, manufacturing, quarrying, grazing, fruit and vegetable growing, lumbering, etc.

### Montana

Formerly a part of Idaho. Became a Territory 1864. Received about 2,000 square miles from Dakota 1873. School lands reserved for sale when Territory became a State valuable and extensive. State admitted to the Union Feb.

22, 1889, at same time as North and South Dakota and Washington.

Climate.—Dry. Rainfall about 12 inches. Warmer than same latitude farther east. Snows heavy in mountains, light in valleys and on plains. Temperature averages summer 62 deg., winter 18 deg. Colder in mountains. Health excellent.

Geographical, etc.—Extreme length east and west 540 miles, average width 274 miles, area 147,061 square miles. The largest county in the United States is Custer County, Montana, which contains 36,000 square miles, being larger in extent than the States of Vermont, Massachusetts, Connecticut, Delaware and Rhode Island. One-tenth of the present population of the United States could find means of a livelihood within this immense county; then it would not be as overcrowded as Belgium was at the time of the last census. Three-fifths of the territory rolling plains, rest mountainous. Surface fairly supplied with small streams; 92,998,400 acres, two-fifths good farm land. Too cold for corn. Area grazing land, over two-thirds territory. Grazing interests great. Timber supply ample. Soil good. Immense area of arable land. Wheat best crop, oats, potatoes, hay, also staples. Mineral wealth great. Ranks fifth in silver and in gold. One of the richest mining countries in the world; mineral wealth almost inexhaustible.

Leading Industries.—Mining, lumbering, grazing, agriculture, smelting, etc.

### Nebraska

Name first applied to the river, and is of Indian origin, signifying "Shallow Water." Nebraska Territory organized May, 1834. Few settlements till 1864. Idaho cut off March, 1863, and present boundaries fixed. Bill to admit July, 1866, unsigned by President Johnson, and another January, 1867, vetoed. Bill passed over veto February, 1867. Admitted that year.

Climate.—Dry, salubrious and free from ma-

laria. Temperature averages summer 73 deg., winter 20 deg. Rainfall east of 100th meridian, including snow, 25 inches, heaviest in May. At west precipitation falls to '17 inches. Rainfall gradually increasing.

Geographical, etc.—Extreme length east and west 424 miles, width 210 miles, area 77,531 square miles, 49,619,840 acres. Manufacturing growing wonderfully. Cattle raising of vast importance and magnitude. Good herd laws. No important minerals. Whole eastern two-fifths a great natural garden. Corn the great crop; wheat, oats, hay, rye, buckwheat, barley, flax, hemp, apples, plums, grapes, berries, staples, and flourish. Surface a vast plain, undulating gently, and principally prairie, with a few low hills. Missouri, Platte, Niobrara, Republican, and Blue, principal rivers, and are fed by numerous smaller streams. Southern portion of State peculiarly favorable to all kinds of crops, western half magnificent series of pastures, and best suited to grazing. At extreme northwest are spurs of the Rocky Mountains, and Black Hill country begins; general slope from west to east.

Leading Industries.—Agriculture, cattle-raising, dairying, manufacturing, etc.

#### **Nevada**

First settlement in Washoe and Carson Valleys, 1848. Gold discovered 1849, silver 1859. Territory organized March, 1861. Admitted as State October, 1864.

Climate.—Mild in valleys; little snow except on mountains. At north mercurcy sometimes falls to 15 deg. below zero; air bracing, health good. Extremes of cold unknown. Summer heat occasionally reaches above 100 deg. Temperature averages summer 71 deg., winter 36 deg. Rainfall slight, chiefly in spring.

Geographical, etc.—Extreme length north and south 485 miles, width 320 miles, area 110,679 square miles, 70,834,500 acres. Lake Tahoe, 1,500 feet deep, 10x22 miles in area, and 9,000 feet above sea, temperature year round 57 deg. Rich

in lead and copper; zinc, platinum, tin and nickel, plumbago, manganese, cobalt, cinnebar, etc., found. Extensive deposits of borax. Coal and iron. Mineral resources enormous. Comstock lode conceded the richest silver mine in the world; Eureka one of the most productive. Ranks second in gold, fourth in silver. Kaolin, building stones, slate, soda, and salt are obtained. Little land improved. Corn, wheat, potatoes, oats, and barley, staple crops; horses, mules, cattle, hogs, and sheep do well. Forests valuable. Considerable areas of grazing land; many valleys, rich, easily worked, and prolific soil. Many mineral springs, warm and cold. Great part of surface unavailable for cultivation.

Leading Industries.—Mining, reducing ores, lumbering, agriculture, etc.

### **New Hampshire**

One of the thirteen original States. Settled by English Puritans at Dover and Portsmouth 1623. Named for Hampshire County, England. Ratified United States Constitution June 21, 1788. Dartmouth College, at Hanover, founded 1769.

Climate.—Winter average 24, summer 69 deg. Extremes great in White Mountains. Winter begins in November, cold till May. Snow lies two-thirds of year in mountains, elsewhere 70 to 130 days. Health good. Summer short and hot, with violent storms. Rainfall 41 inches. Frost late in spring and early in fall.

Geographical, etc.—Extreme length north and south 181 miles, extreme width 92 miles, area 9,305 square miles, 5,855,200 acres. Coast line 18 miles. State ranks high in cotton manufacturing. Mica quarried at Grafton, soapstone at Haverhill, Keene, and Francetown, granite at Plymouth, Troy, Roxbury, Concord. The White Mountains occupy the northern portion of the State with unsurpassed scenery. Highest peak Mount Washington. Largest lake, Winnipiseogee, 74 square miles. General elevation 1,200 feet. Isles of Shoals form part of State. Soil rocky, with small fertile districts. Hay bes



crop; corn, wheat, oats and ordinary vegetables do fairly with close cultivation. Forests largely exhausted, except at the north.

**Principal Industries.**—Agriculture, manufacture of cotton, woolens, lumber, leather, boots and shoes, etc. Quarrying mica, granite and soapstone.

### **New Jersey**

Named in honor of grantee, Sir George Carteret, at one time Governor of the Island of Jersey. One of the thirteen original States. Settled by Dutch, at Bergen, 1620. Delaware Water Gap and Falls of Passaic are the natural wonders of the State. State Constitution adopted 1776, revised 1844, and amended in the present decade. United States Constitution unanimously adopted December, 1787. Battles of Trenton, Princeton, Monmouth, and others fought within its borders during the Revolution. Capital established at Trenton 1790. A slave State till 1810, when but eighteen slaves remained, and it was counted a free State.

**Climate.**—Variable. Temperature averages summer 68 deg. to 75 deg., winter 31 to 38 deg. Range of temperature from about zero to 100 deg. Rainfall, including snow, 46 inches, reaching 50 inches in the highlands, and falling to 40 inches at the south. Highlands and seashore healthy. Ague and malarial fevers in the lowlands.

**Geographical, etc.**—Length north and south 153 miles, width 38 to 70 miles, area 8,173 square miles, or 5,230,720 acres. Toward center State slopes to a rolling plain, and at south becomes flat and low. Hudson River forms part of east border. Atlantic coast 128 miles, Delaware Bay coast 118 miles. The famous Palisades of the Hudson at the northeast are 600 feet high. Little woodland valuable for timber remains. Iron and fertilizing marls are abundant. Hay the best crop. Other staple crops are potatoes, wheat, corn, rye, buckwheat, cranberries, fruit, and garden produce. Cranberry growing a spe-

cialty, Burlington, Ocean, and Atlantic Counties being especially adapted to this industry. Central region a vast market garden.

Chief Industries.—Manufacture of fabrics, jewelry, clay wares and brick, flour, crystals, fishing, oyster fishing, gardening, agriculture, marl, and iron ore digging, etc.

### **New Mexico**

Named in honor of one of the gods of the Aztecs, the ancient inhabitants of Mexico. Organized as Territory 1850. Santa Fe is oldest town in United States, next to St. Augustine. Permanent settlement 1596. Santa Fe, then an Indian town, chosen as a seat of Spanish government. Admitted as a State Aug. 21, 1911.

Climate.—Varies with different elevations. It is much warmer than the average in the lower altitudes, and colder in the higher. Air dry, rarefied, and pure. Rainfall 9 to 11 inches. Temperature averages summer 70 deg., winter 32 deg. Range of temperature 4 deg. below zero to 90 deg. above.

Geographical, etc.—Average length north and south 363 miles, width 335 miles. Area 122,460 square miles, 78,519,680 acres. Zinc, quicksilver, lead, manganese, and large deposits of coal have been found. Irrigable surface 7,000 square miles. Soil rich where water can be had for irrigation or on streams. Gold found in Grant, Lincoln, Colfax, and Bernadillo Counties; rich copper mines in Bernadillo County, and in the Pinos Altos region. Corn, wheat, oats, alfalfa, grapes, vegetables, especially onions and root crops, and semi-tropical fruits are prolific. Sheep raising very profitable. Grazing interests extensive. Elevation 3,000 to 4,000 feet. Mountain peaks 12,000 feet. The Staked Plain, an elevated region unwatered and without food, extends into the southeastern part of the territory. The mountains are clothed with pine, spruce and fir. Cedar grows in foot-hills, and cottonwood and sycamore in valleys. No streams are navigable in the territory. Timber scarce, except in few sections.

Leading Industries.—Mining, stock-raising, and agriculture.

### **New York**

One of the thirteen original States. Explored by Henry Hudson, September, 1609. Samuel de Champlain discovered and named Lake Champlain. Holland owned the territory. Indian troubles 1640-45. Named in honor of the Duke of York, to whom the patent was granted. New York, the battlefield of the French-English war, 1754, was prominent in the Revolution. West Point fortified 1777-78. New York City capital 1784 to 1797. Slavery abolished 1817. Dutch settled on Manhattan Island 1614. Country called "New Netherlands." Manhattan Island purchased from Indians for \$24 in 1626. Swedish settlements on the Delaware incorporated with the New Netherlands 1655. England claimed the country as part of Virginia, captured Manhattan (New Amsterdam), August, 1664, and named it New York. First railroad Albany to Schenectady, 1831.

Climate.—Diverse, mean annual temperature for the State 47 deg. Range of temperature 10 deg. below to 100 above zero. In the Adirondacks the annual mean is 39 deg., in the extreme south it is 50 deg.; average rainfall 43 inches, including snow, the fall being greatest in the lower Hudson Valley, and smallest (32 inches) in the St. Lawrence Valley.

Geographical, etc.—Extreme length east and west 410 miles, extreme width 311 miles, area 53,719 square miles, 34,380,160 acres, water frontage 900 miles, surface varied. The State is noted for the beauty of its lakes. Long, Manhattan, and Staten Islands form important divisions of the State. The Allegheny and its tributaries drain the southwest, and the Susquehanna the southern central division. The Mohawk is the chief affluent of the Hudson. The Hudson, rising in the Adirondacks, and flowing south over 300 miles to New York Bay, is the chief stream. The average annual ice crop of the Hudson River is

3,500,000 tons. The State ranks first in value of manufactures, soap, printing, publishing, hops, hay, potatoes, buckwheat, and milch cows; second in salt, silk goods, malt and distilled liquors, miles railway, and barley; third in agricultural implements, iron ore, iron and steel, oats and rye. The production of corn, wheat, and dairy products is very large. The soil is varied, and agriculturally the State is very rich.

**Leading Industries.**—Agriculture, stone quarrying; dairying, pottery, textiles, sugar refining, and machine-shop work are very important. New York City ranks as the third shipping port in the world, coming after London and Liverpool.

#### **North Carolina**

One of the thirteen original States. Discovered by Walter Raleigh, 1584; settled by English, 1650. State seceded May 21, 1861. Forts, etc., seized by the State troops. Coast section scene of sharp fighting during civil war. State re-entered Union June, 1868.

**Climate.**—Is varied, warm and moist in low sections, cool and dry in mountains, with all intermediate conditions. Frost light and seldom comes until the end of fall. Rainfall, including some snow in mountains, 45 in. Average winter temperature 49 deg., summer 78 deg.

**Geographical, etc.**—Greatest length east and west 453 miles; greatest width, 185 miles; area 52,674 square miles, or 33,711,360 acres, less area water surface. Swamps extensive; most noted of them, the Great Dismal, north of Albemarle Sound, contains 148,000 acres. Coast line 423 miles, with many harbors. Corn best crop, tobacco largest product; other staples, orchard products, sweet potatoes, rice, wheat, oats, peanuts, cotton, hay and vegetables in the order named. Has rich deposits of gold and the baser minerals. Stone, slate, coal, marble, mica. Excellent fisheries. Ranks first in tar and turpentine, second in copper, third in peanuts and tobacco, fourth in rice, ninth in cotton.

**Chief Industries.**—Agriculture principal occu-



pation. Fishing, manufacture of turpentine and lumber, mining, etc.

### Ohio

Name of Indian origin, signifying "Beautiful River." Explored by La Salle 1679. Ohio Territory organized May 7, 1800. Admitted as a State April 30, 1802. First permanent settlement at Marietta, 1788. Area 44,464 square miles.

Climate.—As healthful as any in the United States. Warmest on Ohio River. Average rainfall, including snow, 42 inches; decreases to 37 inches at north, and increases to 47 inches at south. Temperature for State averages, winter 35 deg., summer 77 deg., range of temperature 16 deg. below zero to 101 deg. above. Snowfall considerable.

Geographical, etc.—Extreme length east and west 225 miles, breadth 200 miles, area 44,464 square miles, 28,456,000 acres. Little forest valuable for lumber remains, except in small reserves. Coal, building stones, iron ore and salt are found in vast quantities. Staple crops, wheat, corn, oats, potatoes, tobacco, buckwheat, etc., vegetables, apples and the hardier fruits.

Leading Industries.—Agriculture, dairying, mining, quarrying, pork packing, manufacturing.

### Oklahoma

Formerly Indian Territory, the Indian name meaning "Beautiful Country"; a portion of the great Louisiana Purchase; was set aside for the peaceful tribes and organized 1834, with its government in the hands of the tribes, each to manage its own internal affairs, most of them governed by chiefs, whites only holding property by marrying Indians. All lands were held in common. In 1890 the western half was organized as the Territory of Oklahoma, the eastern portion remaining Indian Territory. The opening of Oklahoma to white settlers, 1889, was signalized by an unparalleled rush; thousands were camped along the boundary for weeks waiting the day when whites were to be allowed to

come in and choose homesteads. In 1893 the Dawes Commission, appointed by Congress, secured agreements with the several tribes to substitute individual allotments for the system of land in common. In 1897 the United States courts assumed jurisdiction. In 1898 the President acquired veto powers over the tribal acts and on March 4, 1906, the tribal organization was dissolved. Oklahoma was organized as a State Nov. 16, 1907, with a unique and modern constitution and has gone forward with strides and bounds in material development.

**Climate.**—Mild in winter, warm in summer; temperature averages 41 deg. in winter and 80 in summer. Rainfall in the east 50 inches, in the center 25 to 35, and west very much less. General health conditions excellent.

**Geographical, etc.**—The surface is a vast rolling plain, sloping eastward; valleys fairly timbered with hard woods. Corn, cotton, rice, wheat, rye and potatoes are staples. Grazing interests are large. Coal and oil in various localities, and large quantities profitably produced.

**Industries.**—Grain raising, cotton growing and cotton ginning; cotton seed oil and flour milling and general manufactures increasing. Coal mining and the quarrying of granite and limestone are very important. Petroleum also important, with very many profitable wells.

### **Oregon**

Name derived from Spanish word signifying "Wild Thyme." Organized as a Territory, 1848; admitted as a State 1859.

**Climate.**—In Western Oregon moist, equable, rainfall 59 inches. In Eastern Oregon dry. Both pleasant and healthful, though subject to occasional extremes at east. Frosts on high lands. Average temperature summer 65 deg., winter 45 deg.

**Geographical, etc.**—Average length east and west 362 miles, average width 260 miles, area 96,838 square miles, 61,976,320 acres. Crops in east do not suffer from drouth. At west snow

and ice unknown, except on peaks, where it is perpetual. Soil generally superior. Wheat the best crop, superior in yield and quality; other crops do well, as do also fruits, vegetables, etc. Two-thirds entire State mountainous, with wide, rich valleys. Columbia River, 1,300 miles long, navigable 175 miles, full of cascades, and runs through enchanting scenery. Timber resources enormous, and a chief industry. Salmon fisheries among best in world. Area arable two-fifths State, forest one-sixth State. Extremely favorable to cattle and sheep. Rich in minerals; gold in Jackson, Josephine, Baker and Grant Counties; copper in Josephine, Douglas and Jackson; iron ore throughout the State, coal along coast range.

Leading Industries.—Agriculture, grazing, mining, fishing, lumbering, fruit growing, canning, etc.

### Pennsylvania

One of the thirteen original States, named for William Penn. First permanent settlement made by Swedes at Chester, 1638. State invaded three times by Confederates, 1862, 1863, when battle of Gettysburg was fought, and 1864, when Chambersburg was destroyed.

Climate.—In mountains severe in winter, with much snow. Average winter temperature 34 deg., summer 74 deg.; rainfall, including snow, averages 42 inches. Healthy. Summers pleasant. Summers hot on the Delaware, reaching 100 deg. Summers long in Susquehanna Valley. West of mountains summers hot and of moderate length, winters cold.

Geographical, etc.—Length east and west 300 miles, width 176 miles, area 45,928 square miles, 29,393,920 acres. Surface very diverse. Soil varies from barren hills to sections of great fertility. Many superb farms. Level at the southeast, hilly and mountainous toward the center, and rolling and broken at the west and southwest. Oil, coal (anthracite at east, bituminous at west), iron, copper, kaolin, building stones, salt abound. Rye, corn, wheat, buckwheat, pota-

toes, vegetables, hay, oats, tobacco are staple crops. Dairying and stock flourish.

**Leading Industries.**—Pennsylvania is the great iron, oil, and coal State. The other industries include agriculture and kindred pursuits, lumbering, manufacture of paper, woolens, implements, machinery, etc.

### **Rhode Island**

One of the thirteen original States and smallest in the Union; supposed temporary settlement of Icelanders as early as 1000. Settled by Roger Williams at Providence 1636. Island of Aquidneck (Rhode Island) bought from Indians 1638, and Newport and Portsmouth founded. Lands of Narragansett Indians acquired by purchase 1709. Last of the thirteen Colonies to ratify the Constitution, which it did in 1790. Rhode Island men distinguished themselves in Anglo-French wars, 1750 to 1763, and in the Revolution. Brown's University at Providence founded 1764.

**Climate.**—Owing to nearness to sea, moderate. Average temperature, winter 24 to 42 deg., summer 44 to 74 deg. Rainfall 43 inches. Snow lies 60 to 100 days. Health good.

**Geographical, etc.**—Area 1,247 square miles, or 798,080 acres. Length north and south 46 miles, width 40 miles. Outranks, in proportion to its size, all other States in value of manufactures. Scenery varied and pretty. Soil middling quality. Hay best crop. Potatoes, corn, and oats are the next most important products. No forests. Dairying profitable. No minerals mined. The State contains numerous small lakes, some of great beauty. Chief rivers—Pawtucket and Pawtuxet, entering Narragansett Bay, and Pawcatuck, falling into Long Island Sound. Block Island, at the western entrance of the bay, belongs to this State. Narragansett Bay divides the State unequally, the western and larger part extending north from the ocean some 27 miles. The bay is 3 to 12 miles wide, and contains several islands, of which Aquidneck, Canonicut, and Prudence are largest. Surface of



State unbroken and hilly. Small rivers unfit for navigation are numerous, and afford valuable water powers.

Chief Industries.—Manufacture of fabrics of cotton, flax, linen, wool, boots and shoes, rubber goods, metal, jewelry, etc., agriculture, dairying.

### South Carolina

Named in honor of Charles II of England, by whom the province was created in 1663. First State to secede, November, 1860. Sumter bombarded April 12 and 13, 1861. Ordinance of secession repealed September, 1865, and slavery abolished. Re-entered the Union June, 1868. One of thirteen original States. Revolutionary record brilliant. English seized the territory, but were thrashed at Cowpens and Eutaw Springs, and penned up in Charleston. First railroad in United States using American locomotive, 1830. Largest rivers, Savannah, Great Pee Dee, Santee, and Edisto.

Climate.—Temperature ranges 15 to 96 degrees. Averages, summer 82 degrees, winter 51 degrees. Resort for consumptives. Changes slight and infrequent, frosts rare. Average rainfall 48 inches, decreasing to the south. Health good.

Geographical, etc.—Greatest length 280 miles, greatest width 210 miles, area 31,048 square miles, or 19,870,720 acres, coast line 212 miles. The Savannah River is navigable 130 miles. Magnificent water power, undeveloped. Ranks first in phosphates. Phosphate beds enormous; gold, mica, marbles of all colors, building stones found in large quantities. Turpentine, tar, lumber, and oysters largely produced. Stock thrives. Rice and cotton best crops. All other cereals as well as vegetables, fruits, grasses, and fiber crops grow well. Soil from medium to very rich. Forests extensive and valuable.

Principal Industries.—Agriculture, mining, fishing, quarrying, lumbering, turpentine and tar making, and phosphate digging.

### Tennessee

Name derived from "Tannasse," Indian name for Little Tennessee River. First permanent settlement 1756, on Tennessee River, about 30 miles from present site of Knoxville; first Anglo-American settlement west of the Alleghanies and south of Pennsylvania. Became a part of North Carolina 1777. Organized as the State of Franklin 1785, but again became part of North Carolina 1788. Ceded to United States by North Carolina 1789. Admitted as a State 1796. Seceded February, 1861; readmitted 1868.

Climate.—One of healthiest in the world. Mild and pleasant, and owing to varying elevation very diverse. Average temperature winter 38 deg., summer 75 deg. Extremes seldom occur. Rainfall 45 to 47 inches. Air bracing. Snow light and lies briefly. Ice rarely more than a mere film in thickness.

Geographical, etc.—Extreme length east and west 430 miles, width 110 miles. Area, 42,056 square miles, 29,475,840 acres. Mountainous at east, where Appalachians separate State from North Carolina. Soil fair, except in central basin, where it is very productive. Resources but little developed; 5,000 square miles of coal field, with 3 to 7 workable veins. Grape growing pays. Principal timbers, walnut, oak, poplar, ash, hickory, etc. Staple products, mules, hogs, peanuts, corn, wheat, cotton, vegetables of all kinds, potatoes, tobacco, hemp, flax, broomcorn, iron, copper, etc. State abounds in coal, iron, fine marbles and building stones, copper, and other minerals. Possesses one of the finest areas of forest in the Union.

Leading Industries.—Agriculture, mining, lumbering, and iron making.

### Texas

Origin of name not definitely known; supposed by some to have been name of Indian tribe. Settled first by French under La Salle, 1685; was a part of Old Mexico. Independence declared Dec. 20, 1835. Houston inaugurated as President

October, 1836. Independence of the Republic recognized by United States March, 1837, by European powers 1839 and '40. Continued wars with Mexico embarrassed finances. Proposition for union with United States 1845, and admitted as a State Dec. 29. State paid \$10,000,000 by United States for all lands outside present limits, 1850. Seceded February, 1861. Houston, who refused to secede, deposed. Military operations small. Last battle of the war near Rio Grande May 13, 1865. Re-entered Union 1870.

Climate.—Varies, temperate at north, semi-tropical at south. Health everywhere most excellent. Rainfall averages at Brownsville 37 inches, increases on coast and to the south, decreases to 13 inches in northwest. Thermometer ranges from 35 to 98 deg., but seldom rises to the latter temperature. At Austin averages winter 56 deg., summer 80 deg.

Geographical, etc.—Extreme length east and west 830 miles, extreme width 750 miles, area 170,247,040 acres; largest of the States and Territories. It has been estimated that the entire population of the globe could be seated upon chairs within the boundary of Texas, and each have four feet of elbow room. Cotton best crop. Other staples sugar, molasses, sweet potatoes, corn, wheat, grapes, and fruits. Dairying extensive. Cattle, sheep, goat, and hog raising on mammoth scale. Lands on Rio Grande and at south require irrigation for good results, although crops will grow to some extent without. Lands extremely fertile, except in the northwest, where water is scarce. Coast line 412 miles. Galveston Bay has 13 feet of water 35 miles inland. Rio Grande navigable 440 miles. Entire State covered with rich grasses, affording pasture the year round. All cereals, root crops, vegetables, fruit, and stock flourish. Cotton picking July to December, corn planting middle of February, grain harvest May, corn harvest July. Coal area 6,000 square miles, quality good. Iron ore and salt deposits extensive. Other minerals found, but

extent unknown. The staked plain of Texas—Llano Estacado—forms part of the western plateau of the State. The name is given it from the great number of bare yucca stems seen there resembling stakes. This plain extends from the head waters of the Colorado, Brazos, and Red Rivers on the east, to the Rio Pecos in New Mexico on the west, and from the valley of the Canadian on the north to the Pecos on the south. Its surface is gently undulating, but owing to lack of water there is almost a total absence of vegetation. The yucca is the only plant that grows there, and this but scantily; there are no trees, and in the summer the feeble crop of grass dries up. This is undoubtedly true of a very large part of the territory called the “staked plain,” but other parts have been settled and irrigated, and are becoming quite fertile. The general level of the plain is from 3,000 to 4,000 feet above the sea.

### Utah

Settled 1848 at Salt Lake by Mormons from Illinois, under the leadership of Brigham Young. March, 1849, State of “Deseret” organized. Congress refused to receive constitution adopted. Territory organized September, 1850. Federal officers driven from Territory in 1856. Troubles with Government till 1858. Entered the sisterhood of States January, 1896.

Climate.—Mild and healthy. Warmer west of Wahsatch Mountains. Spring opens in April. Cold weather begins late in November. In mountains winters severe and snows heavy. Temperature at Salt Lake averages, winter 35 deg., summer 75 deg. Summers dry and hot in southwest. Rainfall averages 16 inches at south and 17 at north, chiefly in October and April.

Geographical, etc.—Average length 350 miles, width 260 miles, 54,353,920 acres. In northwest a large area of desert land. Soil in valleys very productive. Yields fine crops of cereals and vegetables. Southeast portion elevated plateaux; west portion disconnected ridges. Surface rugged and broken, with some rich valleys. Traversed



by Wahsatch, Uintah, Roan, Little, Sierra Lasal, Sierra Abajo, San Juan, Sierra Panoches, and Tushar Mountains. Forest sufficient for home purposes. Gold, copper and silver in Wahsatch Mountains. Silver predominates. Coal in valley of Weber River. Salt found in large deposits, and the lake supply inexhaustible.

**Great Salt Lake.**—Great Salt Lake is a remarkable body of water, in some respects the most remarkable in the world. Like the Dead Sea and the Aral Sea, in Asia, it has no outlet. Its extent is given variously by different authorities. Its area is about 3,200 square miles. It is about 4,200 feet above sea level, and still rising, the mean depth being twelve feet. Its maximum depth is variously given at sixty feet and seventy-eight feet. It contains numerous rocky islands, the longest of which, Antelope, is fifteen miles long. Some of the islands are used as sheep pastures. The Bear, the Weber, and the Jordan Rivers empty into this lake, and are for the most part absorbed by the sandy plain, or evaporated by the dry air of the Great Fremont Basin. Only the Bear River is navigable, and that near its mouth. The waters of Salt Lake contain about 20 per cent of common salt. Unlike the Dead Sea, this lake abounds with animal life, insects, shrimps, etc.

**Leading Industries.**—Mining, stock-raising and agriculture.

### Vermont

First settled by Massachusetts emigrants near Brattleboro, 1724. First State to join original 13. Active in war of 1812. Area, 9,564 square miles.

**Climate.**—Temperature ranges from 15 deg. below to 95 deg. above, but changes not sudden. Winter averages 18 deg. to 33 deg. Summer averages 66 deg. to 75 deg. Summers short. Frosts early in fall and late in spring. Snow lies 80 to 140 days. Health excellent. Death rate very low.

**Geographical, etc.**—Length north and south 149 miles, width 34 to 52 miles, area 6,120,320 acres.

The surface is generally hilly. Highest point

(Green Mountains) about 4,600 feet. Green Mountains run north and south through the State, and are 3,000 to 4,600 feet high. Soil rocky, but good in narrow strips on streams. Potatoes best crop. Corn, wheat, oats, hay, hops, and buckwheat yield moderately if well attended. Dairying profitable. All east of mountains drained by the Connecticut, the only navigable river. Small streams abundant. Rainfall greatest at south and east, where it averages 43 inches; in other sections the average is 35 inches. Snows heavy. Manganese, copper, iron, gold, black, white, red, and variegated marble and slate are found, the marbles and granite in great abundance. State ranks first in quarries.

Industries. — Very varied, numbering 2,900. Principal ones, agriculture, dairying, manufacture of flour, furniture, leather, tin, iron, and copper ware, and lumber, mining, quarrying, and finishing marbles and stones, and maple sugar making.

### Virginia

Named in honor of Elizabeth, the Virgin Queen. One of the thirteen original States. First English settlement in America, 1607. Slavery introduced 1619. Seceded May, 1861; readmitted January, 1870. Capital of Confederacy moved to Richmond 1861. Scene of gigantic energies of the war. Bull Run, the Wilderness, Cold Harbor, Fredericksburg, Port Republic, and many other famous battles were fought on Virginia soil. Lee surrendered at Appomattox April 9, 1865, ending the war. Active in Revolution and subsequent steps toward founding the Union, Virginia won the title of "First of the States." British burnt Norfolk 1779, and Richmond 1781. Yorktown surrendered October, 1781, practically vanquishing England.

Climate.—Varies, is genial and healthful, cool in mountains, and warm in lowlands in summer. Winters are seldom severe. Winter averages 44, summer 78 degs. Rainfall, including snow, averages 44 inches, being heaviest on the coast.

Geographical, etc.—Greatest length east and west 445 miles, width 190 miles. Area 42,330 square miles, 27,091,200 acres. Coast line, 130 miles; tidal frontage, 1,556 miles. All cereals, tobacco, peanuts, fruits, grapes, and vegetables are extensively raised. Stock thrives. The State is rich in iron, gold, salt, coal, marble, slate, zinc, lead, stone, timber, and other natural resources.

Industries.—Half population engaged in agriculture, balance in quarrying, shipbuilding, lumbering, the trades, ironworking, meat packing, tanning, etc.

### Washington

Named for George Washington. First settlement of white Americans at Tumwater, 1845, preceded, however, by Hudson Bay Co.'s trading posts. Organized as Territory 1853. Admitted as State at same time as North and South Dakota and Montana. Indian wars 1855 and 1858. Gold discovered 1855. Island of San Juan in dispute between United States and England 1859. Rights of the Hudson Bay and Puget Sound Co.'s purchased.

Climate.—On coast dry season April to November, rest of year rainy. Rainfall averages at north 96 inches, for entire section 54 inches. Eastern section dry, rainfall 10 inches. Winters mild, little snow or ice. Summer cool, with sea breezes. Temperature averages, winter 39 deg., summer 61 deg., ranges 30 to 90 deg.

Geographical, etc.—Extreme length east and west 341 miles, width 242 miles, area 70,574 square miles, 45,169,369 acres. Coast line 200 miles. Lumber resources unsurpassed. Copper, cinnabar, lead, and other minerals are found. Coal on Bellingham Bay and at Seattle; area of coal-bearing strata 20,000 square miles. Gold-bearing quartz and silver lodes in Cascade and coast ranges. Grazing region entire section east of Cascades, covered with inexhaustible supply of bunch grass. Stock raising and dairying growing industries. Cereals flourish, but corn not successful. Wheat, oats, hops, fruit of temperate climate, except peaches, are staple. Columbia

River current overcomes tide at the mouth, and water in the bar drinkable. Columbia River navigable 175 miles. Excellent harbors in Puget Sound, Admiralty Inlet and Hood's Canal. Scenery, especially on Columbia, grand. First legislature assembled at Olympia February, 1854. The timber belt of Washington Territory covers an area equal to that of the States of Vermont, Massachusetts, Connecticut, and New Hampshire.

Leading Industries. — Agriculture, lumbering, grazing, fruit culture, mining, etc.

### West Virginia

Composed of northern and western counties of the original State of Virginia. History up to 1861 same as that of Virginia. Denounced passage of secession ordinance April 22, 1861. F. H. Pierrepont elected Governor June 20, 1861. Admitted as a State June 20, 1863, and Wheeling made the capital. Capital changed to Charleston 1870. Moved again to Wheeling 1875, and to Charleston again in 1884.

Climate. — Moderate. Average temperature, winter 30 deg., summer 70 deg. Average rainfall 42 to 45 inches. Health is excellent. Elevation reduces heat, which in the valleys averages 76 to 78 deg.

Geographical, etc.—Length north and south, 241 miles, greatest width 158 miles. Area 24,504 square miles, 15,682,560 acres. Surface mountainous with fertile valleys, the Alleghanies principal range. Some high peaks. Scenery fine and much visited by tourists. Staple products include minerals, sheep, hogs, tobacco, wheat, corn, dairy products, fruit, lumber. Petroleum extensively produced. Much of the State is forest densely clothed with oak, walnut, poplar, ash, and other timber trees. Mineral springs abound. The soil, where not mountainous, is excellent. Mineral wealth, including coal, oil, iron, salt, is prodigious. Western part hilly, but gradually descends from 2,500 feet above the sea toward the Ohio River, where the elevation is 800 to 900 feet.



Chief Industries.—Sixty per cent of laborers engaged in agriculture, balance in mining, iron making, lumbering, manufacturing, etc.

### Wisconsin

From river of same name; an Indian word signifying "Wild-rushing River." Settled first by French at Green Bay, 1669. Formed part of Northwest Territory. Included in Indiana Territory 1800. Became part of Michigan Territory 1805. Wisconsin Territory organized 1836. Present boundaries fixed 1838. Madison made capital 1838. Admitted as State May, 1848.

Climate.—Temperature averages, winter 20 deg., summer 71 deg., ranges from 32 deg. below zero to 95 deg.

Geographical, etc.—Milwaukee River frozen over an average of 105 days in year. Rainfall 31 inches, including snow. Snows heavy, especially at north; spring late, summers short, falls pleasant. Extreme length north and south 298 miles, width 260 miles; area 65,805 square miles, 42,115,200 acres. Much of State prairie. Soil excellent, and adapted to farming, dairying and stock raising. Fruits grow and berries are a fine crop. Cranberries largely raised. Wheat the best crop—flax, buckwheat, hay, corn, oats, staples. Extensive lead mines in Grant, Lafayette, and Iowa Counties; native copper in the north, in Crawford and Iowa Counties. Iron ores in Dodge, Sauk, Jackson and Ashland Counties. Besides the great lakes Michigan and Superior, the State contains Green Bay, Winnebago, Geneva, Devil's Lake, and innumerable other lakes in the central and northern sections of the State, of unsurpassed beauty, making the State a favorite place of summer resort.

Leading Industries.—Wisconsin is largely an agricultural State. The mineral resources of the State are considerable, and quarrying is an important industry. The chief industries are the manufacture of agricultural implements and machines, furniture, paper and flour.

### Wyoming

First settlement Ft. Laramie, 1867. Organized as a Territory in 1868, as a State in 1890.

Climate.—Cold, severe in mountains, milder in valleys. Healthful, air pure, dry and bracing. July warmest month, January coldest, latter averages 10 deg. Rainfall, 15 inches. Temperature averages, summer 66 deg., winter 18 deg., ranges from 31 deg. below to 80 deg. above.

Geographical, etc.—Length 350 miles, width 275 miles; area 97,878 square miles, 62,641,920 acres. Surface traversed by Rocky Mountains, forming the continental divide, and is high and mountainous, varying in elevation from 4,800 to 12,000 feet. Mountains covered with forests of considerable extent, contain precious and base minerals in great deposits. Along the streams and in the valleys are tracts of arable lands which may be made to produce prolifically with irrigation. Soil, where water can be had, is good, and chiefly suited to grazing. At the northwest is the Yellowstone National Park, 3,600 square miles in area, and one of the greatest natural wonders of the continent. It varies from 6,000 to over 12,000 feet in elevation, and its scenery is one vast panorama. Coal abundant and of good quality at Evanstown, Carbon, Rock Springs, and other points. Copper, lead, plumbago, and petroleum found, gold in the Sweetwater country and near Laramie City, valuable deposits of soda in valley of the Sweetwater. Wheat, rye, oats, and barley flourish, frost too frequent for corn. Water plentiful, game and fur-bearing animals numerous, iron ore abundant, mainly red hematite.

Leading Industries.—Grazing, mining, and agriculture; but little is done in manufacturing.

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## NON-CONTIGUOUS POSSESSIONS OF THE UNITED STATES

### Alaska

Discovered by Vitus Behring 1741 and became Russian territory by right of discovery. Purchased by United States in 1867 for \$7,200,000.

Climate on the Pacific coast modified by Pacific gulf stream and long summer days. Temperature at Sitka averages in winter about the same as Washington, D. C. Rainfall copious and foggy weather common on coasts and islands; annual precipitation at Sitka, 65 to 90 inches; rainy days 200 to 285 in year. Organized as a Territory Aug. 24, 1912. Juneau is the capital. The legislature, consisting of a senate of eight members and a house of sixteen members, meets first Monday in March of odd-numbered years. Delegate to Congress elected on Tuesday following first Monday of November every second year, beginning with 1914.

Area, 590,884 square miles; population, 1910, 64,356, of whom 25,331 were Indians. Imports from the mainland of the U. S., 1919, \$35,544,-034; shipments from Alaska to the mainland, \$72,068,154, the main articles being copper ore, canned salmon and other fish, and furs. Gold shipments to the mainland in 1919 amounted to \$8,623,924.

### **The Philippine Islands**

Ceded to the United States by Spain Dec. 10, 1898; consideration, \$20,000,000 and special trade conditions. The islands number about 2,000. Luzon, on which the capital, Manila, is situated, is the largest of the group, with Mindanao nearly as large. Racially the inhabitants are principally Malays. There is considerable variety in the climate, which is not excessively hot for the tropics. On the western side of Luzon the temperature during May, the hottest month, ranges from 80 to 100 degrees. June, July, August and September are the rainy months. From October to March is a cool, dry season. By act of Congress of Aug. 29, 1916, the legislative authority is vested in the Philippine legislature, consisting of a senate of 24 members and a house of representatives of ninety members. The governor-general is appointed for an indefinite period. Area, 832,968 square miles, of which 114,958 is land; population, 1918, estimated, 9,009,802. The

chief products of the islands are hemp, sugar, coffee, tobacco, copra, cigars and cocoanut oil. Imports, 1918, \$88,593,211; exports, \$135,194,482. Shipments to the Philippines from the U. S. for the fiscal year 1919 were valued at \$69,030,876; shipments to the U. S. amounted to \$82,490,760.

### **Porto Rico**

Ceded to the U. S. by Spain Dec. 10, 1898. Executive power is vested in a governor and the legislative power in a legislature consisting of two houses, a senate of 19 and a house of representatives of 39 members, all elected for four-year terms. Area, 3,435 square miles; population, 1910, 1,118,012, of which 65 per cent was white. The climate of Porto Rico is hot, but seldom exceeds 97 degrees in the shade, sinking at night to 68 or 69. Annual rainfall, 64½ inches. Porto Rico is unusually fertile, and its principal industries are agriculture and lumbering. The chief crops are sugar, coffee, tobacco, cotton, corn, bananas, rice, pineapples, oranges and other fruits. For the year ending June 30, 1919, the domestic exports from Porto Rico to the U. S. amounted to \$71,015,351; imports from the U. S., \$57,898,085.

### **Territory of Hawaii**

The Hawaiian or Sandwich Islands, in the Pacific Ocean, were discovered by Captain Cook in 1778. They were annexed to the United States July 7, 1898, and constituted a Territory June 14, 1900. The group consists of eight islands, the largest, Hawaii, containing the capital city, Honolulu. The others are named, respectively, Maui, Oahu, Kauai, Molokai, Lanai, Nihoa and Kahoolawe. Total area, 6,449 square miles; population, 1910, 191,909, of which the natives numbered but 93,752, Japanese predominating. Shipments of merchandise from Hawaii to the U. S. in 1919 amounted to \$93,018,404, the most important articles being brown sugar (valued at \$72,231,738), fruits and nuts. Shipments from the U. S. to Hawaii for the same time amounted to \$43,572,794, consisting principally of iron, steel



and machinery, oils, breadstuffs, lumber and manufactures of wood, meat and dairy products and cotton goods.

### **Smaller Possessions**

GUAM, the largest of the Ladrone archipelago, ceded by Spain in 1898, lies 5,200 miles from San Francisco and 900 miles from Manila, on a direct line between those points. Area, 210 square miles; population, about 12,000.

AMERICAN SAMOA.—Tutuila, with three islets, acquired by treaty with Great Britain and Germany, 1899, covers 77 square miles. Population, about 7,200. Pago-Pago is the finest harbor in the South Pacific. The other Samoan islands belonging, before the World War, to Germany, now belong to Great Britain. Distance from San Francisco, 4,000 miles; from Hawaii, 2,200.

WAKE ISLAND, 2,000 miles from Hawaii, on the direct route to Hongkong, was taken in 1899 by hoisting the U. S. flag over it. In a similar way a number of small islets have been acquired: Santa Barbara group, Midway Islands (relay of cable line to Philippines), Christmas, Gallego, Penrhyn, Marcus Islands, etc.

VIRGIN ISLANDS.—Formerly the Danish West Indies. Purchased from Denmark for \$25,000,000. Area, 142 square miles. Population, 1917, 26,051, of whom only 7.4 per cent were white.

PANAMA CANAL ZONE.—Acquired by the United States Feb. 26, 1904. Area, 436 square miles; population, 1918, 21,767.

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### **Mexico**

A confederated republic, divided into 28 states, two territories and one federal district, each with a local government. The lower house of the federal congress consists of one representative for each 40,000 inhabitants, elected for two years, and 56 senators elected for four years. The presidential term is nominally four years. Area, including islands, 785,881 square miles. Estimated population, 1912, 15,501,684, of which about 20 per cent is white, 43 per cent mixed races

and about 37 per cent full-blood Indian. The prevailing religion is Roman Catholic, though by law there is toleration for all others. Mexican trade is principally with the United States, Great Britain, France, Germany and Spain. In 1919 the imports from the U. S. were \$119,962,952; exports to U. S., \$157,693,451. The chief exports of Mexico are precious metals, coffee, petroleum, tobacco, hemp, sisal, sugar, dyewoods, cabinet woods, cattle and hides and skins.

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### Central American States

**COSTA RICA.**—Republic. Area, 23,000 square miles; population, 1917, 434,995. Exports, 1917, \$11,382,000; imports, \$5,595,000. Exports to U. S., 1919, \$8,222,108; imports from U. S., \$4,175,646. Chief products, coffee and bananas; chief imports, cotton, machinery, iron and steel manufactures, woollens and worsteds.

**GUATEMALA.**—Republic. Area, 48,290 square miles; population, 1914, 2,003,579. Exports, 1917, \$7,809,700; imports, \$8,991,550. Exports to U. S., 1919, \$11,115,721; imports from U. S., \$5,946,331. Principal exports, coffee and bananas; imports, cotton and cereals.

**HONDURAS.**—Republic. Area, 44,275 square miles; population, 1916, 613,758. Exports, 1917, \$5,353,250; imports, \$6,293,000. Exports to U. S., 1919, \$6,259,412; imports from U. S., \$6,180,248. Chief exports, bananas, coffee, cattle, coconuts and wood; imports, cotton.

**NICARAGUA.**—Republic. Area, 49,200 square miles; population, 1917, 800,000. Exports, 1917, \$5,975,200; imports, \$6,393,065. Exports to U. S., 1919, \$4,596,303; imports from U. S., \$5,519,537. Chief exports, cattle and coffee; imports, flour, wine, beer, barbed wire, cotton goods, sewing machines, kerosene, calico and tallow.

**PANAMA.**—Republic. Formerly a part of Colombia, but asserted its independence Nov. 4, 1903, and the new government was recognized by the U. S. on Nov. 6. On Nov. 18 a treaty was signed between the U. S. and Panama by which

Panama granted in perpetuity a zone five miles wide on each side of the canal route, also other territory for subsidiary canals and the islands in Panama Bay. Area of Panama, 33,776 square miles; population, 1919, estimated, 375,000. Exports, 1918, \$2,899,557; imports, \$7,821,660. Chief exports, bananas, rubber, coffee and pearls.

**SALVADOR.** — Republic. Area, 13,176 square miles; population, 1917, 1,287,722. Capital, San Salvador, 66,800. Exports, 1917, \$10,588,900; imports (subject to duty only), \$2,619,000. Exports to U. S., 1919, \$5,273,599; imports from U. S., \$5,038,229. Chief exports, coffee, indigo, sugar, tobacco and balsams; imports, cotton, spirits, flour, iron goods, silk and yarn.

### **Cuba**

Cuba, a Spanish possession since its discovery, was relinquished by Spain in the peace treaty of Dec. 10, 1898, with the U. S. Cuba agreed with the U. S. to make no treaty with any foreign power endangering its independence and gave to the U. S. the use of coaling stations at Guantamo and Bahai Hondo and the right of intervention in case of disorder. This right the U. S. was called upon to exercise in 1906. According to its constitution, adopted in 1901, Cuba has a president with six secretaries, a senate and a house of representatives. One-half of the members of the house are elected every two years. Area, 44,000 square miles; population, 1916, 2,627,536. About 70 per cent of the population is white. Imports, 1917, \$261,377,000; exports, \$357,040,000. Imports from U. S., in 1919, \$229,545,706; exports to U. S., \$337,654,142. Principal exports, tobacco and cigars, sugar, iron and manganese ore, fruit, coffee, cocoa, molasses and sponges; imports, animals, breadstuffs, coal and coke, iron and steel, wood, liquor, cotton, chemicals and vegetables.

### **Haiti**

A republic. Area, 10,204 square miles; population, about 2,500,000. Exports, 1917, \$1,692,968; imports, \$1,837,744. Exports to the U. S.,

1919, \$9,496,037; imports from U. S., \$12,152,876. Coffee, cocoa and logwood are the principal exports.

### **Dominican Republic**

Area, 19,325 square miles; population, 1913, 708,000. Exports, 1917, \$17,901,300; imports, 1918, \$20,304,650. Exports to the U. S., 1919, \$9,801,954; imports from U. S., \$15,578,663. The chief exports are coffee, cocoa and mahogany.

### **South American Republics**

**ARGENTINE REPUBLIC.**—Area, 1,153,119 square miles; population, 1918, 8,284,266. Capital, Buenos Aires, 1,637,155. Exports, 1918, \$826,466,000; imports, \$480,895,070. Exports to U. S., 1919, \$165,061,539; imports from U. S., \$138,831,832. Principal exports, sheep, wool, cattle, hides, frozen meats and wheat; imports, machinery, agricultural implements, railway cars, engines and supplies and manufactures of iron and steel.

**BOLIVIA.**—Area, 514,155 square miles; population, 1915, 2,889,970. Capital, Sucre. Exports, 1917, \$63,099,220; imports, \$13,392,300. Exports to U. S., 1919, \$700,253; imports from U. S., \$6,731,916. Principal exports, silver, tin, copper, coffee, rubber; imports, provisions, clothing, hardware, spirits, silks and woolens. Bolivia has no sea coast.

**BRAZIL.**—Area, 3,275,510 square miles; population, 1917, estimated, 27,473,579. Capital, Rio de Janeiro, 1913, 975,818. The official language is Portuguese. Exports, 1918, \$305,839,850; imports, \$264,084,400. Exports to U. S., 1919, \$125,283,489; imports from U. S., \$93,294,275. Principal exports, coffee, sugar, tobacco, cotton and rubber; imports, cotton goods, manufactures of iron and steel, furniture, mineral oils, breadstuffs and provisions.

**CHILE.**—Area, 289,829 square miles; population, 1917, 3,870,002. Capital, Santiago, 408,247. Exports, 1917, \$259,985,495; imports, \$129,603,115. Exports to U. S., 1919, \$135,602,542; imports from U. S., \$70,288,581. Chief exports, nitrate,



wool, hides and leather; imports, sugar, coal, cotton goods, cashmeres, oil and galvanized iron.

COLOMBIA.—Area, 440,846 square miles; population, 1912, 5,472,604. Capital, Bogota, 121,257. Exports, 1917, \$13,441,256; imports, \$24,611,900. Exports to U. S., 1919, \$28,267,604; imports from, \$70,288,581. Chief exports, gold, silver and minerals, coffee, cocoa, cattle, sugar, tobacco and rubber; imports, manufactures of iron and steel and cotton goods.

ECUADOR.—Area, 116,000 square miles; population, about 2,000,000. Capital, Quito. Exports, 1917, \$16,337,850; imports, \$10,193,790. Exports to U. S., 1919, \$9,009,005; imports from U. S., \$5,017,636. Chief items of export, coffee, cocoa, rice, sugar, rubber, cabinet woods, chemicals and minerals; imports, cotton, provisions, manufactures of iron and steel, clothing and mineral oil.

PARAGUAY.—Area, 65,000 square miles; population, 1917, estimated, 1,000,000. Capital, Asuncion. Exports, 1918, \$6,171,311; imports, \$5,141,726. Exports to U. S., 1919, \$363,159; imports, \$734,379. Chief exports, mate (tea), tobacco, hides, timber and oranges; imports, cotton goods, machinery and provisions. Paraguay has no sea coast.

PERU.—Area, 722,461 square miles; population, 1912, about 4,500,000. Capital, Lima, 143,500. Exports, 1917, \$83,217,000; imports, \$67,154,250. Exports to U. S., 1919, \$34,835,636; imports, \$26,149,900. Principal exports, cotton, coffee, sugar, cinchona, india rubber, dyes and medicinal plants; imports, woolens, cotton, machinery and manufactures of iron and steel.

URUGUAY.—Area, 72,153 square miles; population, 1917, 1,407,247. Capital, Montevideo, 378,993. Exports, 1918, \$115,624,315; imports, \$68,884,700. Exports to U. S., 1919, \$47,323,263; imports from U. S., \$27,775,692. Animal and agricultural products are the chief exports; imports, manufactured goods.

VENEZUELA.—Area, 393,976 square miles; population, 1917, 2,844,618. Capital, Caracas, 75,000.

Exports, 1917, \$23,973,350; imports, \$26,583,600. Exports to U. S., 1919, \$19,732,909; imports, \$9,275,680. Principal exports, coffee, hides, cabinet woods, rubber and chemicals; imports, machinery, iron and steel manufactures, provisions, furniture.

### **The Guiana Colonies**

**BRITISH GUIANA.**—A British colony in the northeastern part of South America. Area, 109,000 square miles; population, 278,328. Principal products, rice, sugar, molasses, balata and rum.

**DUTCH GUIANA.**—A colony belonging to the Netherlands. Area, 46,060 square miles. Principal products, sugar, cocoa, bananas, coffee, rice, corn, rum and molasses.

**FRENCH GUIANA.**—A colony of France which has served since 1855 as a penal settlement for habitual criminals. Area, 30,500 square miles; population, 39,349. Principal products, rice, corn, cocoa, coffee, sugar-cane, indigo, tobacco and gutta percha. Gold, silver, iron and phosphates are worked and various woods are exported.

# Alphabetical Index

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|                                                          |     |
|----------------------------------------------------------|-----|
| Abbreviations of Titles and Degrees.....                 | 184 |
| Abdication Dates.....                                    | 364 |
| Accidents, What to Do in Case of.....                    | 22  |
| Acre, What Constitutes an.....                           | 208 |
| Adjournment .....                                        | 194 |
| Advertisement, First Newspaper.....                      | 124 |
| Aerial Weather Forecast, First.....                      | 286 |
| Aerolites .....                                          | 237 |
| Age, How to Tell Any Person's.....                       | 217 |
| Agency, the Law of.....                                  | 85  |
| Airplane Altitude Record.....                            | 10  |
| Airplane Time Record.....                                | 300 |
| Airplanes and Motors, Production of.....                 | 352 |
| Airplanes in the War, American.....                      | 353 |
| Airplanes, Victory Flight of.....                        | 352 |
| Air Pump, First.....                                     | 124 |
| Albert of Belgium, King.....                             | 378 |
| Alcohol, Percentage of, in liquors.....                  | 277 |
| Allies? Who were the.....                                | 332 |
| Alloys, Formation of.....                                | 293 |
| Alloys, Melting Temperature of.....                      | 204 |
| Almanac, the First.....                                  | 125 |
| Alsace-Lorraine .....                                    | 371 |
| Altitude, Greatest, in Each State.....                   | 27  |
| Amendments .....                                         | 190 |
| American Protective League.....                          | 350 |
| Anæsthesia, Discovery of.....                            | 125 |
| Animal, Designations of Groups of.....                   | 49  |
| Animals, Duration of Life of.....                        | 198 |
| Annapolis Naval Academy.....                             | 230 |
| "Annie Laurie," Origin of.....                           | 52  |
| Anniversaries, Wedding.....                              | 140 |
| Antidotes to Poisons.....                                | 203 |
| Ants, How to Disperse Black.....                         | 198 |
| Ants, to Drive Away.....                                 | 211 |
| Ants, to Exterminate Red.....                            | 196 |
| Anzac, Meaning of.....                                   | 332 |
| Aram, Eugene, the Life of.....                           | 287 |
| Architects and Builders' Tables and Esti-<br>mates ..... | 232 |
| Architectural Work, the Oldest.....                      | 98  |
| Armenian Massacres.....                                  | 325 |
| Armistice Celebrations.....                              | 366 |
| Army Clothing, Vast Surplus of.....                      | 364 |
| Army War College.....                                    | 324 |
| Artesian Well.....                                       | 265 |
| Astronomical Facts.....                                  | 233 |
| Atmosphere, Function of the.....                         | 52  |

|                                              |     |
|----------------------------------------------|-----|
| Atrocities, German.....                      | 324 |
| Austria-Hungary's War Losses.....            | 362 |
| Automobile Fast Time Record.....             | 300 |
| Aviation Time Record.....                    | 300 |
| Babel, Tower of.....                         | 252 |
| Balloon Ascent, First.....                   | 124 |
| Balloon, Greatest Elevation by.....          | 9   |
| Banking, Tips on.....                        | 285 |
| Barometers, to Tell Weather With.....        | 214 |
| Barrage .....                                | 331 |
| Battles, Naval.....                          | 94  |
| Battles, Great, of 18th and 19th Centuries.. | 357 |
| Battles, Greatest, Ancient and Modern.....   | 24  |
| Bedbugs, How to Destroy.....                 | 196 |
| Bell, the Largest.....                       | 11  |
| Bells, the World's Great.....                | 290 |
| Beverages, Why Some Froth or Sparkle....     | 199 |
| Bible, Curiosities of the.....               | 282 |
| Bibles of the World, the.....                | 7   |
| Biggest Things, the.....                     | 8   |
| Birds, Flying Speed of.....                  | 301 |
| Birth Prophecy, Child's.....                 | 140 |
| Birth Stones.....                            | 295 |
| Black Fridays, Three.....                    | 271 |
| Blarney Stone, the.....                      | 109 |
| Bleeding, How to Stop.....                   | 22  |
| Blue Laws, Famous Connecticut.....           | 141 |
| Board and Timber Measure.....                | 206 |
| "Boche," Meaning of.....                     | 331 |
| Boilers, Horsepower of.....                  | 126 |
| Boiler Tubes, to Preserve.....               | 50  |
| Boiler, Water Required for a.....            | 137 |
| Boiling Points.....                          | 257 |
| Bolsheviki, Meaning of.....                  | 319 |
| Bone Felon, Cure for.....                    | 197 |
| Book, the First, in English.....             | 45  |
| Book, the Largest Bound.....                 | 9   |
| Books, a List of Good.....                   | 254 |
| Booth, Death of J. Wilkes.....               | 247 |
| Brasswork, to Clean and Brighten.....        | 210 |
| Breath, Remedy for Bad.....                  | 195 |
| Bridge, the Natural, of Virginia.....        | 40  |
| Brooms, Management of.....                   | 136 |
| Builders' Tables and Estimates.....          | 232 |
| Building Operations, Effect of War on.....   | 333 |
| Burns and Scalds.....                        | 22  |
| Bushel, Contents of a.....                   | 302 |
| Business Laws in Daily Use.....              | 87  |
| Cabinet Facts.....                           | 298 |
| Cable, Locating Breaks in Ocean.....         | 74  |
| Cable Message, the First.....                | 39  |
| Calculations, Practical.....                 | 209 |
| Camouflage .....                             | 325 |
| Canadian War Losses .....                    | 363 |



|                                             |          |
|---------------------------------------------|----------|
| Canal, Panama.....                          | 28       |
| Canals, the World's Greatest.....           | 317      |
| Cantonments, World War.....                 | 328      |
| Capitals of States.....                     | 90       |
| Capitals, the Use of.....                   | 18       |
| Capitol, the National.....                  | 417      |
| Cards, Playing.....                         | 96       |
| Cards, Visiting, Origin of.....             | 285      |
| Carpets, to Remove Oil or Grease Spots from | 212      |
| Carriages, First Wheeled.....               | 124      |
| Castings, the Two Largest.....              | 10       |
| Castle Garden .....                         | 99       |
| Castor Oil, to Destroy Taste of.....        | 135      |
| Casualties in World War, U. S.....          | 359      |
| Casualties, U. S. Marine.....               | 360      |
| Catacombs of Paris, the.....                | 248      |
| Catacombs of Rome, the.....                 | 245      |
| Cat's Fur Crackles When Rubbed, Why....     | 200      |
| Cattle, Determining Weight of.....          | 227      |
| Cavell, Edith, Execution of.....            | 329      |
| Cavern, the Biggest.....                    | 8        |
| Caves, Famous American.....                 | 239      |
| Cement for Castings.....                    | 210      |
| Cement for Glass.....                       | 211      |
| Cement for Joints .....                     | 210      |
| Central Powers, the.....                    | 327      |
| Certificates of Deposit.....                | 77       |
| Character by the Month.....                 | 114      |
| Checks, Bank.....                           | 78       |
| Chicago's Great Fires.....                  | 69       |
| Chicken-pox .....                           | 221, 222 |
| Child's Prophecy, the.....                  | 140      |
| China, the Great Wall of.....               | 266      |
| Churches, Eight Largest.....                | 10       |
| Church Statistics, U. S.....                | 284      |
| Circles and Globes.....                     | 140      |
| Cistern Measure.....                        | 209      |
| Cistern Water, to Purify.....               | 198      |
| Cities, Area of American.....               | 323      |
| Cities, Fastest Growing.....                | 291      |
| Cities, Fifteen Largest.....                | 213      |
| Cities, Largest, in the World.....          | 182      |
| Civil Service Commission.....               | 267      |
| Civil War, Age of Soldiers in.....          | 127      |
| Civil War Soldiers, Nationality of.....     | 296      |
| Clemenceau, Georges.....                    | 376      |
| Cleopatra's Needles, History of.....        | 36       |
| Clinkers, How to Remove.....                | 211      |
| Clocks, Ancient.....                        | 294      |
| Coach, First, in Scotland.....              | 125      |
| Coaches, First Used in England.....         | 125      |
| Coaches in England.....                     | 162      |
| Coal Area of the World.....                 | 51       |
| Coal Breaker, the Largest.....              | 9        |
| Coal, Cannel.....                           | 134      |

|                                                     |          |
|-----------------------------------------------------|----------|
| Coal, Cubic Feet in a Ton of.....                   | 54       |
| Coal, First Discovery of, in America.....           | 55       |
| Coal, Weight of.....                                | 302      |
| Coal Oil, Discovery of.....                         | 241      |
| Coliseum at Rome, the.....                          | 252      |
| Collarbone, Broken.....                             | 23       |
| Colleges, Founding of Noted.....                    | 280      |
| Cologne Cathedral.....                              | 112      |
| Colonies, German.....                               | 337      |
| Color, What We Know of.....                         | 137      |
| Colors. See Tints.                                  |          |
| Colors, Harmony of.....                             | 48       |
| Colors, Symbolic Meaning of.....                    | 138      |
| Columbus, the Wives of.....                         | 64       |
| Comets, Periodic.....                               | 289      |
| Committees .....                                    | 188      |
| Confederate Money, Depreciation of.....             | 100      |
| Congressmen's Speed in Delivery.....                | 301      |
| Constellations, How to Find the.....                | 233      |
| Constitution of the U. S., the.....                 | 335      |
| Contagious and Eruptive Diseases.....               | 221      |
| Conundrums and Riddles.....                         | 178      |
| Copyright Law, the United States.....               | 30       |
| Corn Measure.....                                   | 209, 210 |
| Correspondence, the Correct Thing in.....           | 18       |
| Countries of the World, Principal.....              | 143      |
| Country Boys Physically Inferior to City Boys ..... | 320      |
| Courtesy, High Cost of.....                         | 89       |
| Cures and Remedies, Useful.....                     | 195      |
| Czars, the Last of the.....                         | 377      |
| Dardanelles, the .....                              | 335      |
| Death Rate, U. S., in World War.....                | 360      |
| Debate, Order in.....                               | 193      |
| Debt, World's, Estimated.....                       | 367      |
| Declarations of War.....                            | 316      |
| "Der Tag".....                                      | 336      |
| Desert, the Largest.....                            | 9        |
| "Deutschland," German Merchant Submarine .....      | 333      |
| "Deutschland Ueber Alles".....                      | 334      |
| Diameter of Wheels, to Find.....                    | 110      |
| Diphtheria .....                                    | 221      |
| Disarmament .....                                   | 334      |
| Discount Your Bills.....                            | 91       |
| Discoveries and Settling of Countries.....          | 223      |
| Diseases, Contagious and Eruptive.....              | 221      |
| Distances from Atlantic to Pacific Ports... ..      | 55       |
| Distances from Washington.....                      | 246      |
| Distances, Postal, and Time of Transit.....         | 26       |
| Divorce Laws.....                                   | 105      |
| Divorces in Different Countries.....                | 59       |
| Draft Evasions.....                                 | 349      |
| Draft, Military.....                                | 336      |
| Draft, Rejections Under Selective.....              | 353      |
| Drafts .....                                        | 77       |

|                                             |          |
|---------------------------------------------|----------|
| Drafts, Grace on Sight.....                 | 139      |
| Dreams, Duration of.....                    | 276      |
| Dreams, Interpretation of.....              | 170      |
| Drowning .....                              | 23       |
| Drums, Velocity of.....                     | 137      |
| Due Bills .....                             | 77       |
| Ear, to Destroy Insects in.....             | 197      |
| Earthquakes and Catastrophes.....           | 102      |
| Easter, Why so Irregular.....               | 62       |
| Echoes, Cause of.....                       | 201      |
| Eclipse .....                               | 62       |
| Eclipses, Remarkable.....                   | 163      |
| Educational Statistics, U. S.....           | 284      |
| Egg, Food in an.....                        | 279      |
| Eggs, How to Engrave on.....                | 270      |
| Elections, Presidential, from 1880.....     | 264      |
| Electric Light, the Largest.....            | 10       |
| Electrical Units, Definition of.....        | 202      |
| Elevators, Velocity of.....                 | 38       |
| Enemy Aliens.....                           | 350      |
| Engine, to Calculate Horsepower of.....     | 131      |
| Engineering Feats, Ancient.....             | 252      |
| Entente, Definition of.....                 | 338      |
| Envelopes, First Used.....                  | 125      |
| Equator, the .....                          | 233      |
| Equinoxes .....                             | 233      |
| Esperanto .....                             | 61       |
| Etiquette, Table, for Children.....         | 281      |
| Eugene Aram, the Life of.....               | 287      |
| Expenditures by U. S. in Former Wars....    | 361      |
| Express Companies, U. S.....                | 161      |
| Eye, How Far It Can See.....                | 86       |
| Eyes, Hot Water for Inflamed.....           | 297      |
| Facts About Ourselves.....                  | 53       |
| Famines .....                               | 104      |
| Feathers, How to Cleanse.....               | 136      |
| Federal Reserve Act.....                    | 123      |
| Felons, to Cure.....                        | 197, 198 |
| Figure Puzzle, a.....                       | 145      |
| Fires, Chicago's Great.....                 | 69       |
| Fires of History, Great.....                | 41       |
| First Occurrences, Dates of.....            | 124      |
| Fish, the Increase of.....                  | 72       |
| Fits .....                                  | 23       |
| Five Kings, the.....                        | 7        |
| Flag, First Union.....                      | 125      |
| Flagging Stone, the Largest Slabs of.....   | 10       |
| Flies, to Drive from Stables.....           | 195      |
| Flies, to Keep from Horses.....             | 195      |
| Floods, Disastrous, of World's History..... | 11       |
| Flowers, Language of.....                   | 218      |
| Flowers, State.....                         | 153      |
| Foch, Marshal Ferdinand.....                | 372      |

|                                            |     |
|--------------------------------------------|-----|
| Fog .....                                  | 12  |
| Food, Analysis of Various Articles of..... | 220 |
| Food, Facts About.....                     | 219 |
| Food, Fat, Water and Muscle Properties of  | 219 |
| Food in an Egg.....                        | 279 |
| Food, Percentage of Nutrition in.....      | 219 |
| Food Shipments to Allies, America's.....   | 354 |
| Food, Time Required for Digestion of.....  | 219 |
| Foreign Legion, the.....                   | 338 |
| Fortress, the Greatest.....                | 8   |
| Fortune Telling.....                       | 164 |
| Fortune Telling by Cards.....              | 167 |
| Fortune Telling from the Teacup.....       | 166 |
| Fountain Jet, Highest Single.....          | 332 |
| "Four-Minute" Men.....                     | 338 |
| Fractured Limbs.....                       | 22  |
| Freedom of the Seas.....                   | 338 |
| Freezing Point.....                        | 302 |
| Freezing Points.....                       | 257 |
| French, Field Marshal.....                 | 376 |
| French War Losses.....                     | 362 |
| French Words and Phrases.....              | 158 |
| "Frightfulness" .....                      | 340 |
| Frosts, Historical.....                    | 101 |
| Fruit Stains, to Remove, from Hands.....   | 211 |
| Furniture, How to Clean.....               | 211 |
| Furniture, How to Take Bruises Out of....  | 135 |
| Furniture Polish, a Good.....              | 295 |
| Gallon, Contents of a.....                 | 302 |
| Gallon of Water, Weight of a.....          | 302 |
| Gas in War, Use of.....                    | 341 |
| Gas Masks, Uncle Sam's.....                | 354 |
| Gas Meter, to Read a.....                  | 292 |
| Generals and Lieutenant-Generals, U. S.... | 318 |
| Genius of Youth.....                       | 290 |
| George, David Lloyd .....                  | 373 |
| German Colonies.....                       | 337 |
| German Propaganda in U. S.....             | 364 |
| German Republic, First President of.....   | 333 |
| Gestation, Periods of.....                 | 215 |
| Gilding, How to Test.....                  | 211 |
| Gilt Frames, to Restore.....               | 211 |
| Glass, Discovery of.....                   | 48  |
| Glass, How to Cut or Bore.....             | 116 |
| Glass, Malleable.....                      | 298 |
| Glass Windows, First.....                  | 124 |
| Globes, Circles and.....                   | 140 |
| Gloves, How to Clean.....                  | 211 |
| Glue, Liquid, How to Make.....             | 133 |
| "God Save the King," Revised.....          | 344 |
| Gold in California, Discovery of.....      | 66  |
| Governors' Terms and Salaries.....         | 90  |
| Grain Measure .....                        | 209 |
| Grain, Shrinkage of.....                   | 109 |
| Grand Army of the Republic.....            | 177 |



|                                             |          |
|---------------------------------------------|----------|
| Gravity .....                               | 234      |
| Great Eastern, the.....                     | 12       |
| Gum on Postage Stamps, Formula of.....      | 301      |
| Hague Conference.....                       | 351      |
| Haig, Sir Douglas.....                      | 375      |
| Hair, How to Clean.....                     | 211      |
| Hair Brushes, How to Clean.....             | 211      |
| Hair, Superfluous, to Remove.....           | 297      |
| Hall of Fame, the.....                      | 60       |
| Halo .....                                  | 233      |
| Harbors, the Finest.....                    | 100      |
| Harvest Moon .....                          | 234      |
| Hay Measure.....                            | 210      |
| Hens, How to Make Lay.....                  | 116      |
| Heart, Mechanism of the.....                | 46       |
| Heat, Effect of, on Various Substances..... | 204      |
| Heat, Excessive, in the Past .....          | 145      |
| Heat, Subterranean.....                     | 194      |
| Heat-conducting Power of Metals, Etc.....   | 302      |
| Henry, Patrick, Famous Phrase of.....       | 371      |
| Hills in an Acre of Ground.....             | 258      |
| Hindenburg, von, Field Marshal.....         | 375      |
| Holidays, Legal.....                        | 63       |
| Horse, to Tell the Age of a.....            | 65       |
| Horse, Facts About the.....                 | 93       |
| Horsepower, Definition of.....              | 294      |
| Housekeepers, Facts of Value to.....        | 211      |
| Hows and Whys, Some.....                    | 134      |
| Human Body, Facts About the.....            | 13       |
| "Hun" .....                                 | 340      |
| Hunter's Moon .....                         | 234      |
| Ice Boats, Speed of.....                    | 116      |
| Ice, How to Keep in Summer.....             | 197      |
| Ice, Strength of.....                       | 260      |
| Immigration to the U. S.....                | 71       |
| Income Tax.....                             | 341      |
| Indians in United States.....               | 163      |
| Influenza, Deaths from.....                 | 351      |
| Ink, Invisible.....                         | 34       |
| Ink Stains, to Remove.....                  | 212, 299 |
| Insects in Ear, to Destroy.....             | 197      |
| Insects' Wings, Velocity of.....            | 123      |
| Insensibility .....                         | 23       |
| Inside Dimensions, Table of.....            | 209      |
| Insurance, War Risk .....                   | 320      |
| Interest Laws and Statutes of Limitations   | 148      |
| Interest Table.....                         | 283      |
| Interest—Time in Which Money Doubles        | 113, 208 |
| Interned German Vessels.....                | 343      |
| Investments, Table Showing Income on.....   | 21       |
| Ireland, Kings of.....                      | 268      |
| Iron, Breaking and Crushing Strains of...   | 137      |
| Islands, the Largest.....                   | 258      |
| Island That Floats, an.....                 | 215      |

|                                            |          |
|--------------------------------------------|----------|
| Italy's War Losses.....                    | 363      |
| Ivory Handles, to Prevent from Cracking    | 136      |
| I. W. W., the.....                         | 339      |
| Jewish Religion, the.....                  | 205      |
| Jews, Persecutions of.....                 | 187      |
| Joffre, Marshal.....                       | 374      |
| Julius Caesar's Wives.....                 | 274      |
| Junker .....                               | 341      |
| Jupiter, the Planet.....                   | 235      |
| Jutland, the Battle of.....                | 342      |
| Kerosene First Used .....                  | 125      |
| Kitchener, Earl.....                       | 373      |
| Knives First Used.....                     | 124      |
| Knot (Nautical Mile), Definition of.....   | 12       |
| Koran, the.....                            | 7        |
| "Kultur" .....                             | 342      |
| Lafayette Escadrille, the.....             | 342      |
| Lakes, Elevation of the, Above Tide.....   | 45       |
| Landlord and Tenant, Law of.....           | 78, 81   |
| Land Measure .....                         | 209      |
| Language of Flowers.....                   | 218      |
| Latin Words and Phrases.....               | 158      |
| Law, Points of.....                        | 75       |
| Laws, Business, in Daily Use.....          | 87       |
| League of Nations, Constitution of the.... | 379      |
| Lease, Rights Under a.....                 | 79, 81   |
| Leather, to Make Waterproof.....           | 211      |
| Lemon Will Do, What a.....                 | 144      |
| Lenine, Nikolai .....                      | 374      |
| Letter-writing, Rules for.....             | 18       |
| Liberty, Statue of.....                    | 64       |
| Light, More, at Less Cost.....             | 294      |
| Light, Velocity of.....                    | 135      |
| Lightning, Damages by.....                 | 101      |
| Limitations, Statutes of.....              | 148      |
| Linseed Oil, Process of Extracting.....    | 297      |
| Loans to Allies by U. S.....               | 366      |
| Locomotive, First.....                     | 125      |
| Longevity, Human.....                      | 14, 15   |
| Looking-glasses, How Made.....             | 48       |
| Louisiana Purchase.....                    | 296      |
| Lubricant Which Will Not Gum.....          | 210      |
| "Lusitania," Sinking of the.....           | 345      |
| Map, England's Costly.....                 | 293      |
| Marble, How to Clean.....                  | 212      |
| Marriage, Curiosities of.....              | 37       |
| Mars, the Planet.....                      | 234      |
| Mason and Dixon's Line.....                | 291      |
| Match, First Lucifer.....                  | 125      |
| Mayflower's Passengers, the.....           | 72       |
| Measles .....                              | 221, 222 |
| Measures of Length, Sundry.....            | 47       |

|                                            |     |
|--------------------------------------------|-----|
| Meat, How to Preserve.....                 | 116 |
| Melting Points.....                        | 257 |
| Melting Points of Metals.....              | 131 |
| "Melting Pot".....                         | 345 |
| Mercury, the Planet.....                   | 235 |
| Metals, Melting Points of.....             | 131 |
| Metals, Specific Gravities of.....         | 263 |
| Metals, Weight of a Cubic Inch of Various  | 44  |
| Meteors .....                              | 236 |
| Metric System, the.....                    | 150 |
| Metric System, Story of the.....           | 151 |
| Mildew, How to Remove, from Cloth.....     | 212 |
| Miles of Various Nations.....              | 127 |
| Military Academy, U. S.....                | 228 |
| Military Draft .....                       | 336 |
| Military Resources of the U. S.....        | 345 |
| Military Service, Universal.....           | 347 |
| Million Dollars, Weight of a.....          | 53  |
| Mirrors, How made.....                     | 48  |
| Money .....                                | 293 |
| Money, Foreign, Value of in U. S. Currency | 366 |
| Monroe Doctrine, the.....                  | 358 |
| Month to Month, Number of Days from....    | 139 |
| Monuments and Towers, Height of.....       | 57  |
| Moon, the—Is It Inhabited?.....            | 244 |
| Moon, Facts About the.....                 | 20  |
| Moon, Harvest and Hunter's.....            | 234 |
| Mosquito Bites, How to Cure.....           | 212 |
| Mother Shipton's Prophecy.....             | 130 |
| Moths, How to Get Rid of.....              | 212 |
| Motions .....                              | 189 |
| Motions, Undebatable.....                  | 193 |
| Mottoes, State.....                        | 153 |
| Mountains, the Highest.....                | 113 |
| Mumps .....                                | 221 |
| Munitions Output, U. S.....                | 330 |
| Muscles of the Human Body.....             | 130 |
| Musical Notes First Used.....              | 124 |
| Names, the Longest.....                    | 294 |
| National Bank Resources, U. S.....         | 326 |
| Nations in the Great War, Age of.....      | 363 |
| Nations in World War, Wealth of.....       | 315 |
| Naturalization Laws of the U. S.....       | 117 |
| Naval Academy, U. S.....                   | 230 |
| Naval Battles, Some Famous.....            | 94  |
| Naval Fatalities, U. S.....                | 360 |
| Naval Strength, U. S.....                  | 326 |
| Naval Vessels Lost, U. S.....              | 356 |
| Naval War College.....                     | 342 |
| Navy, British.....                         | 331 |
| "Nearer, My God, to Thee," Author of.....  | 296 |
| Negotiable Instruments, Law of.....        | 75  |
| Needle Floats on Water, Why a.....         | 199 |
| Needles, First Used.....                   | 124 |
| Neptune, the Planet .....                  | 234 |

|                                           |          |
|-------------------------------------------|----------|
| New Orleans Cemeteries, Etc.....          | 248      |
| Newspaper, First Daily.....               | 125      |
| Newspaper, First Published.....           | 124      |
| New York's Two Billion Passengers.....    | 286      |
| Niagara Falls, Sending Vessels Over.....  | 287      |
| Nicholas II, Czar.....                    | 377      |
| North Pole, the Search for the.....       | 109, 243 |
| Notes, Promissory.....                    | 75       |
| Obelisk, the Oldest.....                  | 35       |
| Ocean Cable, Locating Breaks in an.....   | 74       |
| Ocean, Greatest Depth of the.....         | 54       |
| Ocean, Time Crossing the, in 1838.....    | 12       |
| Ocean Travel, Items Concerning.....       | 12       |
| Ocean Waves, Velocity of.....             | 56       |
| Oil and Water Will Not Unite, Why.....    | 200      |
| "Old Oaken Bucket," Origin of.....        | 231      |
| Onions, to Remove Smell of, from Breath.. | 195      |
| Paint, How to Remove, from Dress Goods    | 212      |
| Palmistry .....                           | 164      |
| Panama Canal .....                        | 28       |
| Panama Canal, Distances Saved by.....     | 55       |
| Panics, Financial.....                    | 271      |
| Paper, the Largest Sheet of.....          | 9        |
| Parks, National, in the U. S.....         | 16       |
| Parliamentary Rules and Usages.....       | 188      |
| Partnership, the Law of.....              | 82       |
| Patents Granted, U. S.....                | 349      |
| Pawnbroker's Sign, Origin of.....         | 45       |
| Peace Conference, President Wilson at the | 346      |
| Pen, the First Steel.....                 | 125      |
| Pershing, General John J.....             | 372      |
| Petroleum, Discovery of.....              | 241      |
| Phrase, a Famous.....                     | 371      |
| "Pill Boxes".....                         | 343      |
| Plagues, Great .....                      | 288      |
| Planet .....                              | 234      |
| Plants, Native Lands of.....              | 250      |
| Plants or Shrubs Per Acre.....            | 259      |
| Plaster of Paris Hardens, Why.....        | 201      |
| Playing Cards.....                        | 96       |
| Plymouth Rock, History of.....            | 275      |
| "Poilu" .....                             | 344      |
| Poisons, Antidotes to.....                | 203      |
| Polish, Philosophy of.....                | 134      |
| Population in U. S., Center of.....       | 370      |
| Population of the U. S.....               | 182, 261 |
| Porcelain Tower of China.....             | 281      |
| Postage Stamps, Introduction of.....      | 127      |
| Postal Distances.....                     | 26       |
| Postal Savings statistics.....            | 280      |
| Postoffices First Established.....        | 124      |
| Power Required to Move a Given Weight..   | 110      |
| Practical Calculations.....               | 209      |
| Precious Stones, Language of.....         | 34       |



|                                             |     |
|---------------------------------------------|-----|
| Presidents, Education of the.....           | 289 |
| Presidents, Graves of the.....              | 67  |
| Presidents, How They Died.....              | 132 |
| Presidents not Inaugurated March 4.....     | 265 |
| Presidents, Politics of the.....            | 272 |
| Presidents, Religion of the.....            | 256 |
| Printing Press, First in U. S.....          | 124 |
| Printing Press, First Set Up.....           | 124 |
| Privileged Questions.....                   | 191 |
| Prohibition Amendment, States Ratifying...  | 162 |
| Propeller, First Ocean.....                 | 12  |
| Proportions of Various Compositions.....    | 257 |
| Pyramids, the Egyptian.....                 | 35  |
| Question, Division of a.....                | 191 |
| Question, the Previous.....                 | 192 |
| Questions, Equivalent.....                  | 192 |
| Question of Order.....                      | 192 |
| Questions, Privileged.....                  | 191 |
| Quorum .....                                | 188 |
| Races of Europe, Small.....                 | 352 |
| Races of the World.....                     | 279 |
| Radium and Radio-Activity.....              | 127 |
| Railroad Time Record.....                   | 300 |
| Railroad Statistics, U. S.....              | 160 |
| Railways and Their History.....             | 56  |
| Railways, Facts About.....                  | 144 |
| Railway Signals.....                        | 131 |
| Rainstorms, Remarkable.....                 | 213 |
| Rats, How to Get Rid of.....                | 198 |
| Razor, the Edge of a.....                   | 299 |
| Recipes, Useful.....                        | 210 |
| Reconsideration .....                       | 193 |
| Red Cross, History of the.....              | 356 |
| Religion of the Presidents.....             | 256 |
| Riddles, Conundrums and.....                | 178 |
| Rifle Strength in World War.....            | 318 |
| River Appears More Shallow, Why.....        | 199 |
| River, to Measure Width of a.....           | 152 |
| Rivers and Canals, Flow and Fall of.....    | 46  |
| Rocks, How Cut by Water.....                | 199 |
| Roof Elevations.....                        | 232 |
| Ropes, Qualities of Different.....          | 49  |
| Rubber Overshoes, to Mend.....              | 195 |
| Rupture .....                               | 24  |
| Russian War Losses.....                     | 362 |
| Rust, to Prevent .....                      | 210 |
| Rust, to Protect Steel or Iron from.....    | 58  |
| Rust Stains, to Remove.....                 | 212 |
| Sahara, Desert of.....                      | 58  |
| Sailing Round the World.....                | 146 |
| Sailor's Uniform, Traditions of the.....    | 327 |
| Salaries of U. S. Army and Navy Officers... | 365 |
| Salt Bed, the Great Kansas.....             | 293 |

|                                                       |          |
|-------------------------------------------------------|----------|
| Salt Lake, Great.....                                 | 447      |
| San Francisco Bay.....                                | 411      |
| Saturn, the Planet.....                               | 235      |
| Saving .....                                          | 286      |
| Sayings of the World War, Great.....                  | 322      |
| Scalds and Burns.....                                 | 22       |
| Scarlet Fever.....221,                                | 222      |
| Scraps of Information.....                            | 302      |
| Screw, How to Remove a Rusty.....                     | 213      |
| Sea Shells, How to Polish.....                        | 111      |
| Secession and Readmission of Confederate States ..... | 34       |
| Seed Required Per Acre.....                           | 258      |
| Seeds, Vitality of.....                               | 260      |
| Settling of Countries, Dates of.....                  | 223      |
| Seven Wonders of the World.....                       | 97       |
| Sewing Machine, the First.....                        | 125      |
| Shingles Required in a Roof.....                      | 232      |
| Shipboard, Time on.....                               | 276      |
| Ships .....                                           | 136      |
| Shot-tower, Origin of the.....                        | 249      |
| Shrubs or Plants Per Acre.....                        | 259      |
| Sick-chamber, to Purify a.....                        | 197      |
| Silverware, How to Clean.....                         | 213      |
| Sinn Fein .....                                       | 343      |
| Smallpox .....                                        | 221, 222 |
| Smoke-stacks, Varnish for.....                        | 210      |
| Soap Bubble, Cause of Colors of a.....                | 200      |
| Solar System, the.....                                | 20       |
| Solder, How to Make 33 Kinds of.....                  | 92       |
| Solomon's Temple.....                                 | 252      |
| Some Hows and Whys.....                               | 199      |
| Sound, Velocity of.....135,                           | 202      |
| Sounds, Facts as to.....                              | 126      |
| South Sea Bubble, the.....                            | 278      |
| Sozodont, How Made.....                               | 115      |
| Spanish-American War, Casualties in.....              | 138      |
| Specific Gravity of Various Metals.....               | 263      |
| Specific Gravity of Various Substances.....           | 121      |
| Spelling, Rules for.....                              | 17       |
| Sphinx, the.....                                      | 35       |
| Spinning-wheel, First.....                            | 124      |
| Spoons, to Remove Egg Stains from.....                | 211      |
| "Spurlos Versenkt".....                               | 344      |
| Stains, to Remove, from Linen.....                    | 212      |
| Starch, How to Prevent from Souring.....              | 213      |
| State Capitals.....                                   | 90       |
| States and the Union.....                             | 29       |
| States, Popular Names, Flowers and Mottoes of .....   | 153      |
| Steamboat, First.....                                 | 124      |
| Steam Engine, First.....                              | 124      |
| Steamship, First.....                                 | 125      |
| Steamship Time Record.....                            | 300      |
| Steamships, Mail.....                                 | 12       |
| Steamships, World's Largest.....                      | 70       |

|                                            |          |
|--------------------------------------------|----------|
| Steel, a Popular Fiction About.....        | 146      |
| Steel, Breaking and Crushing Strains of... | 137      |
| Steel, Notes on Working of.....            | 73       |
| Steel, to Test Quality of.....             | 90       |
| Stockings, Silk, First Worn.....           | 147      |
| St. Peter's and Cologne Cathedrals.....    | 112      |
| Strength, Human.....                       | 15       |
| Sugar, How Refined.....                    | 57       |
| Sun and Earth, Comparative Size of.....    | 199      |
| Sun, the.....                              | 236      |
| Sun Spots.....                             | 236      |
| Super-guns, Deaths Due to.....             | 350      |
| Table Etiquette for Children.....          | 281      |
| "Tanks" .....                              | 355      |
| Tar, How to Remove from Cloth.....         | 211      |
| Telegraph Instrument, First Operated...'   | 125      |
| Telegraph Statistics, U. S.....            | 161      |
| Telephone, History of the.....             | 39       |
| Telephone Statistics, U. S.....            | 161      |
| Telescope, the First.....                  | 125      |
| Telescopes, Invention of.....              | 124      |
| Temperance Society, the First.....         | 125      |
| Temperature in United States.....          | 122      |
| Temperatures .....                         | 299      |
| Theater, the Largest.....                  | 8        |
| Thermometers Compared.....                 | 214      |
| Timber and Board Measure.....              | 206      |
| Timber, Seasoning and Preserving.....      | 115      |
| Timber, to Compute Volume of Square.....   | 206      |
| Time, Comparative Table of.....            | 216      |
| Time, Fast.....                            | 300      |
| Time, How Waste Has Been Utilized.....     | 269      |
| Time "Lost" and "Picked Up" at Sea.....    | 146      |
| Time on Shipboard.....                     | 276      |
| Time, Standard and Local.....              | 266      |
| Tin, History of.....                       | 260      |
| Tints, How to Mix Inks or Paints for.....  | 111      |
| Titles and Degrees, Abbreviations of.....  | 184      |
| "Tommy Atkins".....                        | 343      |
| Tonnage Losses in War, World's.....        | 361      |
| Tooth, to Kill Nerve of a Hollow.....      | 135      |
| Trade, Foreign, of the U. S.....           | 251      |
| Trade Marks.....                           | 185      |
| Trees, Age and Growth of.....              | 242      |
| Trees, Noted American.....                 | 300      |
| Trees per Acre.....                        | 133      |
| Trees, the Biggest.....                    | 9        |
| Trees, the Big, of California.....         | 253      |
| Tributes to the Fair Sex.....              | 120      |
| Trinity Church Property.....               | 295      |
| Tripitake, the.....                        | 7        |
| Triple Alliance, the.....                  | 346      |
| Tunnel, the Longest.....                   | 8        |
| Typewriting Time Record.....               | 300      |
| Typhoid Fever.....                         | 221, 222 |

|                                              |          |
|----------------------------------------------|----------|
| U-boats .....                                | 347      |
| U-boats Lost.....                            | 319      |
| "Uncle Sam," origin of.....                  | 169      |
| "Uncle Tom's Cabin," Author of....           | 149      |
| United States, Early Settlement of the.....  | 273      |
| United States, Growth of the.....            | 155      |
| United States, Military Resources of the.... | 345      |
| United States, Population of the.....        | 182      |
| Uranus, the Planet.....                      | 235      |
| Valley, the Greatest.....                    | 147      |
| Varnish Formulas.....                        | 99       |
| Vassar College.....                          | 270      |
| Vedas of the Hindoos, the.....               | 7        |
| Velocity of Insects' Wings.....              | 123      |
| Velocity of Wheels, Pulleys, Drums, Etc....  | 111      |
| Velvet, to Raise the Pile on.....            | 213      |
| Venus, the Planet.....                       | 235      |
| Verdun .....                                 | 347      |
| Vessels, Capacity of, in Gallons.....        | 302      |
| Virgin Islands, the.....                     | 348      |
| Vision, Limits of.....                       | 86       |
| Volcanoes, Height of.....                    | 50       |
| Wandering Jew, the.....                      | 283      |
| "War Babies".....                            | 348      |
| War, Declarations of.....                    | 316      |
| War Garden Crops.....                        | 320      |
| War Risk Insurance.....                      | 320, 348 |
| War's Toll, the Great.....                   | 361      |
| War Strength, American Peak of.....          | 319      |
| War, World, Chronology of the.....           | 303      |
| Wars of the U. S., Former.....               | 361, 368 |
| Warts, How to Remove.....                    | 196      |
| Washington Monument.....                     | 416      |
| "Watchful Waiting".....                      | 349      |
| Water Expands in Freezing, Why.....          | 200      |
| Water Pressure.....                          | 47       |
| Waterfalls, the World's Greatest.....        | 160      |
| Waves Are Calmed by Oil, Why.....            | 200      |
| Waves, the Height of.....                    | 51       |
| Waves, Velocity of Ocean.....                | 56       |
| Weapons and Methods, New, of World War       | 355      |
| Wedding Anniversaries.....                   | 140      |
| Weight of Men, Women and Children.....       | 13       |
| Weight of Various Materials.....             | 121      |
| Weights and Measures, Tables of.....         | 207      |
| Wells, Foul Air in.....                      | 367      |
| West Point Military Academy.....             | 228      |
| Wheels, to Find Required Diameter of.....    | 110      |
| Whip Crack, Cause of a.....                  | 135      |
| White House, the.....                        | 181, 417 |
| Whooping-cough .....                         | 221      |
| Wilhelm, Kaiser.....                         | 376      |
| Wire, Longest Span of.....                   | 10       |
| Wise Men of Greece, Sayings of.....          | 136      |



|                                             |         |
|---------------------------------------------|---------|
| Woman, Tributes to.....                     | 120     |
| Wonders of America, Twelve.....             | 278     |
| Wonders of the World, Seven.....            | 97      |
| Wood Engraving, First.....                  | 124     |
| Wood for Fuel.....                          | 259     |
| Wood Measure.....                           | 140     |
| Woods, Durability of.....                   | 142     |
| Woods, Relative Hardness of.....            | 206     |
| World War, British and U. S. Forces in..... | 318     |
| World War, Chronology of the.....           | 303     |
| World War, Cost of the.....                 | 367     |
| World War, Great Sayings of the.....        | 322     |
| World War, Men Furnished by States in...    | 365     |
| World War, Nations in the.....              | 315     |
| World War Personages, Noted.....            | 372     |
| Wounds, Flesh.....                          | 23      |
| <br>X-rays .....                            | <br>128 |
| <br>Yellowstone Park.....                   | <br>238 |
| Yield per Acre, Comparative.....            | 114     |
| Y. M. C. A. in the World War.....           | 321     |
| Youth, Genius of.....                       | 290     |
| <br>Zendavesta, the.....                    | <br>7   |
| Zeppelins .....                             | 349     |

# Index to Atlas

---

- Abyssinia, 406  
Afghanistan, 404  
Africa, 406  
Alabama, 408  
Alaska, 452  
Algeria, 406  
Argentine Republic, 458  
Arizona, 408  
Arkansas, 409  
Asia, 404  
Australia, 393  
Austria, 395  
Belgian Kongo, 406  
Belgium, 395  
Bokhara, 404  
Bolivia, 458  
Brazil, 458  
British Guiana, 460  
Bulgaria, 395  
California, 410  
Canada, 393  
Central America, 456  
Chile, 458  
China, 404  
Colombia, 459  
Colorado, 412  
Connecticut, 413  
Costa Rica, 456  
Cuba, 457  
Czecho-Slovakia, 395  
Delaware, 415  
Denmark, 396  
District of Columbia, 415  
Dominican Republic, 458  
Dutch East Indies, 400  
Dutch Guiana, 460  
Ecuador, 459  
Egypt, 406  
England, 392  
Esthonia, 396  
Europe, the New, 391  
Europe, Map of, 392  
Finland, 396  
Florida, 418  
France, 397  
French Guiana, 460  
Georgia, 419  
Germany, 397  
Great Britain, 392  
Greece, 398  
Guam, 455  
Guatemala, 456  
Guiana, 460  
Haiti, 457  
Hawaii, 454  
Honduras, 456  
Hungary, 398  
Iceland, 398  
Idaho, 420  
Illinois, 420  
India, 392  
Indiana, 421  
Iowa, 422  
Ireland, 392  
Italy, 399  
Japan, 405  
Java, 405  
Jugo-Slavia, 404  
Kansas, 423  
Kentucky, 424  
Khiva, 405  
Kongo, 406  
Labrador, 393  
Liberia, 406  
Lithuania, 399  
Livonia, 399  
Louisiana, 425  
Madagascar, 407  
Maine, 426  
Maryland, 426  
Massachusetts, 427  
Mexico, 455  
Michigan, 428  
Minnesota, 429  
Mississippi, 430  
Missouri, 431  
Montana, 431  
Montenegro, 399  
Morocco, 407  
Nebraska, 432  
Nevada, 433  
Netherlands, The, 399  
New Hampshire, 434  
New Jersey, 435  
New Mexico, 436  
New York, 437

- New Zealand, 394  
Nicaragua, 456  
North America, 407  
North Carolina, 438  
North Dakota, 414  
Norway, 400  
Ohio, 439  
Oklahoma, 439  
Oregon, 440  
Panama, 456  
Panama Canal Zone, 455  
Paraguay, 459  
Pennsylvania, 441  
Persia, 405  
Peru, 459  
Philippines, The, 453  
Poland, 400  
Porto Rico, 454  
Portugal, 401  
Rhode Island, 442  
Roumania, 401  
Russia, 401  
Salvador, 457  
Samoa, 455  
Sandwich Islands, 454  
Scotland, 392  
Serbia, 402  
Siam, 405  
South Africa, 394  
South America, 458  
South Carolina, 443  
South Dakota, 414  
Spain, 402  
Sweden, 402  
Switzerland, 403  
Tennessee, 444  
Texas, 444  
Tunis, 407  
Turkey, 403  
Tutuila, 455  
Ukraine, 403  
United Kingdom, 392  
United States, 407  
United States, Map of, 392  
Uruguay, 459  
Utah, 446  
Venezuela, 459  
Vermont, 447  
Virginia, 448  
Virgin Islands, 455  
Wake Island, 455  
Wales, 392  
Washington, 449  
West Virginia, 450  
Wisconsin, 451  
Wyoming, 452











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